

**A SCIENTIST
AMONG THE SOVIETS**

A SCIENTIST AMONG THE SOVIETS

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P r e f a c e

THIS little book is the fruit of a visit to Russia in the summer of 1931 as one of a party of scientific and medical men and women organized by the Society for Cultural Relations. The vivid impressions which the journey made upon me I endeavoured to summarize in a series of articles which appeared in *Nash's Magazine*, and others which were published in *Vanity Fair* and the *Week-End Review*. In addition, three further articles which were written for a newspaper, but for various reasons were not published, have been incorporated with the remainder of the material. I would like to thank the editors and publishers of these publications for permission to reprint the articles.

My thanks are also due to the Society for Cultural Relations between the Peoples of the British Commonwealth and the U.S.S.R., which organized the party from the English end, to the Russian official bureau *Voks*, which concerns itself with the care of foreign tourists in the U.S.S.R., and to Intourist, the Russian tourist office, whose arrangements throughout were

PREFACE

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excellent. It would be invidious to name those in official positions in Russia whose kindnesses and efforts on our behalf made our trip such an interesting and profitable one, but I cannot refrain from mentioning Professor Vavilov, head of the Bureau of Plant Industry, and Mr. Bukharin, head of the Scientific Department of the Supreme Economic Council.

I am only too conscious of the shortness of my stay in the country and of the small amount of the vast area of the U.S.S.R. which our party covered ; we did, however, see enough to bring back certain very definite impressions, and it is these that I am trying to present, without further apology, in this little book.

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CHAPTER I

THE RUSSIAN ATMOSPHERE

THE casual tourist notes the obvious differences and resemblances between Russia and the countries which he knows—the men's blouses or open collars, the scarcity of taxis, the shopping queues, the level of prices, the housing shortage, or what not ; but behind it all is the knowledge of the one fundamental difference—the difference in the very structure of society itself.

Imagine a biologist in a world peopled only by vertebrates ; and then introduce him to a lobster. Try to imagine his astonishment at his first sight of a creature with nineteen pairs of limbs, some of which it used as jaws, others to feel with, others as a sting ; with its kidney in its head, with its eyes compound and on stalks, with its skeleton outside instead of inside and having to be doffed for each increment of growth. Or, perhaps better, try to picture him familiar with no organism higher than a sponge, and then being presented with even the humblest flat-worm ; how he would interest himself in the

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presence of fore and aft ends, back and belly, right and left sides, in place of the sponge's amorphous growth ; in the evolution of a head with, actually (however rudimentary), a brain ; in life's new device of a mouth in place of an indefinite number of food-ingesting pores. Imagine this, and you will imagine some of the strange feelings with which the visitor from a capitalist world finds himself regarding the wholly new type of social organism in which he is for the time immersed.

Soviet Russia to-day differs in two fundamentals from any other type of civilized society. It is organized as much as possible on a communal or collective as against an individualist basis, primarily for the benefit of the working classes, and with the incentive of private profit reduced to the smallest proportions ; and its economy is planned throughout.

I purposely refrain from entering into thorny questions of political principle, or the precise interpretation of communist theory. It is enough to point out that both these two facts are direct consequences of Marxist communism. For the final aim of Marxism is the attainment of a classless society ; but this, according to orthodox communist doctrine, can only be reached via 'the dictatorship of the proletariat'—a rather

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high-sounding phrase meaning roughly that paramountcy (to use a term made familiar to us by the debates over East African policy) must be given to working-class interests. And Marxism is further based on a rigorous scientific philosophy, which really implies the necessity of planning.

In my third chapter I shall deal with Russian planning. Here I shall try to give some picture of Russia as a collectivist and working-class society, basing myself as far as possible on my own concrete experiences.

In Russia to-day, the industrial worker in a factory has his common dining-room where he gets a plain but substantial dinner; his club-room, gymnasium, meeting-hall, and miniature theatre; his educational facilities. The babies of women workers are looked after in a crèche while their mothers are working; later, until they are seven, they are put in a kindergarten.

You may retort that such facilities, as well or better organized, are provided by the more enlightened firms in other countries. But for one thing, in Russia these privileges are general, if not yet as universal as they are supposed to be on paper. And for another, the workers are not working to make private dividends; through their committees and delegates, they have a

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share in the running of the factory and can criticize and modify its administration, and the profits which they help to make either go back into the business, or are used to promote their own collective amenities, or else benefit the country as a whole.

So with the new communal peasantry. The workers in the most developed type of collective farms are housed in model dwellings, and any profits their undertaking may bring in are devoted to buying new machines or stock, to building new farm buildings, or to improving the farm's facilities for education and recreation.

And the workers, of course, receive various privileges which others do not, in the shape of lower taxation, higher scale of rations, educational facilities (only a certain small percentage of places in the University may be allotted to non-proletarians), insurance, and so forth. It was only this summer that the Government, prompted by the acute shortage of good technical advisers, decreed that henceforth engineers should enjoy the same rights as proletarians.

To put himself in the proper frame of mind for understanding the extraordinary phenomenon of this new Russia, one must capture something of the general Russian atmosphere. It is no good viewing everything Russian through your own

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imported atmosphere, for that merely acts as a distorting lens to the facts. Just as it is hopeless to try to understand and deal with, say, Central Africa without stepping out of the atmosphere of competitive progress, commercialism, Christianity, and Public School tradition into the local atmosphere of tribalism, ancestor-worship, magic, and clan ownership, so the visitor to Russia must attempt to discard some of his 'bourgeois' ideas about democracy, religion, and traditional morality, his romantic individualism, his class feelings, his judgments of what constitutes success, and pick up what he can of the atmosphere in which the Russians live immersed. It is an atmosphere in part due to the abstract principles which have set the great experiment in motion, in part the result of the new organization thus set up.

In what follows I shall try to reproduce something of this unfamiliar Russian atmosphere.

One element of the Russian atmosphere is a certain difference in spirit, difficult to capture in words, but none the less real enough. To bear me out, I may quote a passage from Maurice Dobb's book, *Russian Economic Development since the Revolution* :

'Should he (the visitor to Russia) leave the automobile or the *droshky* for the rough and tumble of a tramcar, and jostle the crowd which throngs the en-

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trance to a suburban cinema ; should he chew dried salt herring and sip beer while he listens to the fiddler playing wild gipsy songs of the steppes in a small *peevnaya* ; still more if he peep into a factory or worker's club, he can hardly fail to sense that here there is something important and new. At first this novel quality may be hard to define : and when defined it may arouse either a romantic affection or dislike and a secret fear. In a sense intangible and unmeasurable, its effect on the *stimmung* of social life seems as powerful as a new chemical element applied to a chemical composition. The foreigner will notice the absence of cap-touching among workers to "superiors." He will remark a certain confident bearing among the working men and women who walk the Nevsky or the Moscow boulevards after sunset, and how intercourse between managers and men in a factory, or officers and men in a ship or a barrack room, has a distinctly novel freedom and lack of restraint. It will seem surprising to find that State officials and persons in authority take pains to be ordinary rather than distinctive in their dress, and a little shocking that a bourgeois bearing and appearance, which in other countries assure a deference so customary as to pass unnoticed, here command no deference, but rather a measure of contempt.

' This new social equality which undoubtedly exists in Russia is something more fundamental than the measure of social equality which, in contrast to Europe, is said to exist in the New World. In Russia it is not mixed with an individualist desire to prosper and to climb a social ladder of which the rungs are income-grades. It is divorced from a worship and evaluation of success in money terms and from defer-

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ence to the man who has won a financial position above his fellows and shows it in his habits and dress and bearing. Rather does the man who makes more money or works more easily than the average strive to maintain an appearance to the contrary, while pride of parentage exists only when parents were toiling and poor. . . . Improvement of financial position for the individual, save within fairly narrow limits, is only possible through measures which raise the standard of the whole mass ; and an increasing part of the enjoyments which contribute to that standard, in the shape of club rooms and communal services, is assuming a collective rather than an individual form.'

It is at first hard to remember the existence of this, to us, inverted class consciousness, and hard to appreciate its far-reaching influence. But it is there. My wife and I were several times asked, 'Are you workers?' and our interrogators seemed to find it difficult to understand why any one but good proletarians should be granted facilities to travel in Russia.

I remember very well the moment when the difference between my world and the Russian world was first really brought home to me. We were in a crowded street-car (all street-cars in Russia are always crowded) in the company of an Englishwoman who spoke Russian fluently. A drunken man lurched against her : she told him to behave : he, being in the irascible phase

of inebriation, growled something at her. She laughed, and explained to us that what he had said was, 'You're no worker.' It was the same impulse which would prompt a maudlin Englishman to say, 'You're no lady': but the impulse is, for us, standing on its head.

In the west of America, equalitarian democracy has led to everybody thinking himself individually as good as any one else—and indeed rather better. In Russia, the new spirit is the spirit of an emancipated class.

Here is a good example of the changed spirit. We are on the river-steamer between Ryazan and Moscow, a restful thirty-six-hour journey up the winding Oka and then its tributary the Moscow river. There are no tourists on this boat: only peasants travelling cheaply to market, men coming to find work in Moscow, office-workers returning from their holiday. Among the couple of hundred passengers we are the only foreigners, tempted aboard by a Russian friend who has had business in Ryazan and wants to show us the beauties of the river, its glimpses of intimate Russian life, its old towns, the fairy-story monasteries on its banks.

She knows the Captain, and through her we too are allowed access to the top deck, from which the ordinary run of passengers is barred. The hot

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afternoon is passing into evening: after a siesta, we come up again to the top deck. Forrard is a group of figures on a hatch. The centre of the group is the Captain, trim in his white ducks, but with collar and jacket unbuttoned in deference to the heat. The others are members of the crew, comfortably sitting or sprawling around, but all armed with pencil and notebook. It is part of the Captain's job to give instruction to his crew; and this was a lesson in navigation methods. Never, assuredly, was lesson more pleasantly informal; but from the faces of the men it was clear that they were keen to learn all they could.

Then there is the attitude which springs from living in a communist society. Communism in practice in Russia may have fallen short of some of its principles—as when differential wage-rates are officially introduced for different categories of skilled and unskilled labour. Or it may not have been in existence long enough to have achieved certain developments which could only arise in late stages of its growth—such as, for instance, the attainment of a classless society through the medium of the class war and the strict disciplining of the minds of the rising generation. None the less, Russian society, in spite of its economic and social inequalities, and its employment of force and repression in Government, is of a quite dis-

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tinctive type, and we may as well use the official label for the type and call it communist.

There seems to me to be two chief effects of living in this communist society. One is a new attitude of the working classes, which I have already touched on ; the other is a tendency to collective living, collective working, collective playing, and even collective thinking.

This emphasis on the collective rather than on the individual side of existence is in part due also to the difficult material conditions of the country. The intense housing shortage makes privacy all but impossible. Even in the modern workers' dwellings, each apartment, usually designed with two rooms and a kitchenette, is now generally split up to provide accommodation for two families instead of one. Again, in the almost complete absence of anything in the nature of cafés, people are more restricted to their official clubs ; and until mass-production has given everybody a car, individualist picnicking is difficult and people must fall back more, for their open-air diversions, on the regulation parks, athletic grounds, and bathing-places.

But behind all such contributory causes lies a deliberately collective spirit. Every new block of workers' dwellings has its communal restaurant. Every factory has its crèche where the women

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workers' children are looked after together. Later, when they reach the kindergarten age, the children are sent away from their parents for from one to three months into the country, there to imbibe during their most formative period a tradition of living a communal life. Still later they will mostly belong to the Pioneers (the communist counterpart to Boy Scouts and Girl Guides) and will once more be removed, in the summer for long stretches at a time, from the individualistic influences of home. And when they are adult, the influence of the workers' clubs and athletic associations will make itself felt in the same direction. To take but one example, the vogue of physical culture ('*Physkultura*,' as the modern Russian jargon of the compound word has it), with its emphasis on drill and exercises in common, makes for a mass-psychology effect.

Here I may record an actual scene. One evening I was returning to my hotel by tram, when we were held up by a procession. It was composed of men and women, lads and girls, in their '*Physkultura*' costume, which consists of nothing but shoes, trunks, and a vest. Bareheaded and barelimbed, eight abreast, they marched up the main street of Moscow, often breaking into song. The parade went on and on, for some twenty minutes

all told. I later discovered that this was one contingent returning from a large Physical Culture demonstration that had been addressed by Stalin himself in the Red Square. It certainly was an impressive sight, and a good deal more attractive and encouraging than most demonstrations one sees in the streets of London, whether May-Day parades, anti-vivisection processions, hunger marches, or cohorts of unemployed. As I watched them, there formulated itself consciously in my mind a question which had been there for some time, I realized, just below the surface. Is it in Russia that there is destined to grow up a new attitude towards the human body, more like the Greek ideal than anything possible in a country tinged with the Christian attitude? For that attitude, even when it does not fall into asceticism, seems inevitably to introduce something of shame or of contempt (overt or repressed) into men's and still more women's feeling about their bodies. It will not be the same as the Greek attitude; for the Russians seem not to bother much about beauty. Health, efficiency, strength, recreation—that is what they are after. And they let no prejudice, religious or other, stand in their way.

Here the passion for physical culture had been combined with that other very Russian trait, the

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passion for Demonstrations, in which thousands of people, assembled for a common purpose, have their feelings played on by oratory until collective enthusiasm is engendered and raised to a high pitch. Every big city has some public place, such as the Red Square in Moscow, where this form of collectivism regularly manifests itself. However, it is not only such large-scale demonstrations that must be reckoned with. You are always running across small processions, headed by the inevitable banner with slogan, 'demonstrating' in their own small way about this or that. These are the collective cells out of which the huge bodies of the big demonstrations are compounded.

If I had space, I should like to expatiate on all that the vogue for sport and exercise means to Russia. It is a new vogue, deliberately encouraged by the powers that be, and it is making a great difference to health, enjoyment, and general outlook. Football is being played in villages all over the country; the Pioneers lead an even more strenuous life than our Boy Scouts (I met one boy of fifteen who had been on a march of twenty miles, barefoot too); the movement is almost as strong among women as among men.

There are over ninety sports grounds in

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Moscow. The largest of these is the Dynamo Stadium, about three miles from the centre of the city. Here I proceeded one sunny afternoon, under the wing of the youthful deputy-director of an important Government department, who had been captain of the Moscow soccer team. Bowered in trees, excellent hard tennis-courts : in the centre a big concrete stadium, seating 60,000 people, with dressing-rooms, gymnasia, rooms for boxing and fencing, bathing, and restaurants : here and there red streamers with white lettering proclaimed that ' Sport is the bulwark of the proletarian revolution ' and other slogans of the sort.

We began with the last day of a three-day programme of track athletics between Moscow, Leningrad, and Kharkov. As is the general Russian custom, both men and women competed, but naturally in different events. My deputy-director friend announced the results and times to the crowd through a microphone. I do not think that the average was nearly up to British or American standards, but there were some good individual performances. Malaiov won the 5000 metres in 15 mins. 51 secs., which is fair ; and there was a little monkey-like man in the Moscow team who did some lovely pole-jumping. He did not begin until a number of

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other competitors had failed, and finally cleared nearly four metres.

Afterwards, as the day cooled to sunset, football—Leningrad *v.* Kharkov. The game was a bit ragged and open, and I do not think that either side would have made much of a show against a good professional team; but it was very far from being bad football, the play was fast and keen, and the enthusiasm of the public unbounded.

We are so accustomed to think of Britain as the home of sport that we find it difficult to remember that as a nation we are an unathletic race. A small percentage of our people are superbly athletic; but a large percentage are weedy and under-developed. For some years past, the average of physique in Germany has excelled ours; and soon Russia too will outstrip us.

The collectivization of amusement is another feature of the situation. It is not merely that the Russians take their pleasures gregariously. Coney Island, or Hampstead Heath on a Bank Holiday, far outdo any Russian crowds. But there is an attempt to organize the amusements with the collectivist idea in mind.

The biggest park in Moscow is called 'the Park of Culture and Rest.' At the far end is the Rest section, with abundance of deck-chairs, and

little open-air libraries at which you may borrow books. Towards the city, there are side-shows, restaurants, theatres, cinemas. There is a bandstand, surrounded with huge hoardings on which are painted propaganda cartoons. There is an exhibition of machinery. There are courts for volley-ball, open-air gymnastic apparatus, places where the novice can be instructed in fencing, bayonet practice, athletics (the coaches all giving their time voluntarily).

Community singing is always going on in two or three places, very efficiently run by young women. And community dancing is also much in vogue. Every day there are small dancing circles, but sometimes the big central square is given over to this. The band plays the tune ; the conductor, through a microphone, explains the dance and tells those who want to take part to form a circle ; then the instructors—a dozen pairs of young girls—demonstrate the dance ; the public try the steps, first slowly, then faster ; and finally they dance for some ten minutes, then beginning on another set of steps. Our party happened to be there on an evening of this sort, and insisted on joining in the fun. And all of us, from medical students to Harley Street specialists and scientific professors, experienced a real exhilaration from our brief immersion in this

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organized mass activity shared with four or five hundred other human beings.

They also play some kind of organized parlour-game in the Park, but I could not discover just what it was, save that it seemed a little like 'Twenty Questions.'

Almost every day the central square is the seat of a different activity. Once I saw a big demonstration of physical exercises by boys and girls; once a parade of trained Alsatian dogs; and once there was an enormous anti-gas demonstration, staged as a mimic gas-attack from the air. Five aeroplanes came across from the aerodrome; mimic bombs were exploded all over the Park, scaring up a protesting flock of rooks. Men and women lay down, pretending to be casualties. Fire-engines and ambulances with all the personnel in gas-masks drove up and rescued the 'casualties.' Hand-carts which sprayed anti-gas chemicals were wheeled up and down. To add as much verisimilitude as possible, the men with the 'bombs' would often throw them right up against the crowd, which hastily scattered before the explosion could take place; and the fire-engines were deliberately driven through the masses of people, ringing their bells and hooting. I do not know whether this was *Culture* or *Rest*, but it certainly proved a very popular spectacle.

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I would like to say something of the small State collective farm I saw at Gorky, an hour's train journey from Moscow, but have no space save for one incident. We were kept waiting for some time before some one in authority could be found. When he appeared, he apologized, explaining that they were having an executive meeting that morning. Later we passed through the room where the meeting was being held. It consisted of various of the farm-workers, men and women, who had been elected by their fellows to the executive ; and they were discussing plans for improving production.

In a way more interesting than what we saw on the farm were various unexpected and unrehearsed incidents of the day.

Also at Gorky is a rest home for workers ; and when it came to the question of lunch, we walked down there, and succeeded in getting a plain but clean, decently cooked, and very satisfying meal at the restaurant, which was in what used to be the servants' quarters of an old country house. As we went across the yard, a man got up from a bench and spoke to us in excellent English. He was having his fortnight's vacation there, and insisted on showing us how things were done. He was a little man, bareheaded, with a pleasant fox-terrier sort of face, and dressed in a sleeveless

vest and grey trousers. He had a book with him, *Don Quixote*, in Russian, with nice steel engravings ; just the thing for a holiday, he explained. He had been teaching in a factory school, and was now about to enter the Academy for Red Professors, where he would have to face a course in history, higher mathematics—‘ One can’t understand the bases of modern civilization without higher mathematics,’ he said (what about that, you Oxford Greats tutors, eh ?)—history of philosophy, dialectics (*i.e.* orthodox Marxist philosophy), economics, social science, and politics.

He took us down to his room in one of the three ex-country houses belonging to the rest home. Two or three beds to a room ; clean and tidy ; pleasant gardens to lounge in. They were wonderfully fed, he said, and enumerated the dietary programme with some gusto. Wholemeal bread and a sort of rice pudding first thing in the morning, and the same just before bedtime at nine in the evening. Breakfast at nine ; dinner at one—soup, meat, and sweet (what we had had) ; tea, cake or biscuits and cheese at four ; a three-course supper at seven. People often put on 5 lb. or 6 lb. a week. . . . Most people get a fortnight’s holiday. Workers in dangerous trades get a month. (They also get an extra ration of milk at their work ; I saw the men in the dyeing

and bleaching section of a Moscow textile factory being served their milk while at work.) And expectant mothers get two months before and two months after the birth of the baby.

Later in the day, after we had been shown the central part of the farm, I said I would like to see some of the field work, and we set out along the road. There we met a strapping lad of fifteen, naked to the waist, and I got the embryo Red Professor (who had attached himself to us for the afternoon) to ask him questions. He was at the school, which is an integral part of the farm. The boys have three years there, till they are about sixteen. They come mostly from the neighbouring villages. In the winter they can do nothing but ordinary lessons, but in the summer they work four hours in school and then four hours in the fields. In school they have an agricultural bias, but also learn geography, science, mathematics, and, of course, the regulation social and political economy—not such a bad curriculum.

In the fields, they usually worked by themselves, in little groups, each with a leader elected by the group. Yes, he was the leader of a group. When he was through, he was going to work as a labourer on the farm for a couple of years and then go to the Timiriazev Academy (the big agri-

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cultural school, with over two thousand pupils). We went with him, and found the group. Did they like school? Yes. And what did they do after lessons and work were over? Wash, have supper, and then play football or some other game, or go swimming.

Well, I thought, at least this is an improvement in pre-war peasant life. And what I had seen had certainly not been organized for the benefit of tourists.

Another feature of the prevailing atmosphere which the visitor must remember if he is not to pass hasty and superficial judgments is this—that in many ways Russia regards herself as being in a state of war, or at least under semi-martial conditions. When we remember the bellicose utterances of prominent anti-Russians the world over, and the depth of the anti-Bolshevik feeling (held often with sacramental fervour) in every important capitalist country, and recall further the fact that for three years after the revolution, England, France, Czecho-Slovakia, Poland, and other Powers were actually using force of arms against the embryo Republic, we can at least understand the martial feeling, even if we lament its persistence. Then remember that the capitals of Europe are full of Russian *émigrés* desperately anxious for the fall of the

Soviet régime, and that counter-revolution is far from dead. And finally recall that in its attempts to transform society almost overnight, the Soviet Government is bound, especially in early stages, to use a good deal of force and to create a good deal of discontent, and that from time immemorial the idea of foreign war has been found useful to distract public attention from domestic difficulty.

On the Moscow river we had a reminder of the existence of these semi-martial conditions. Our little river-steamer, crowded with cheerful country folk, was puffing upstream through the most idyllic scenery. Nothing could have been more peaceful. Then round a bend we came in sight of a railway bridge across the river ; and at once the order was given that all passengers must go below. Apparently in the days of civil war steamers had been fired at from the bridges. This regulation was one survival from those times : another was the presence of a sentry with fixed bayonet parading the bridge.

One has to get used to sentries with bayonets in Russia. They are posted at the gates of most factories, and even outside the civil aerodrome, the Croydon of Moscow. Yet this appears to be more of a gesture than a necessity ; it is a reminder that the country is still regarded as in a

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state of war, and is not, it would seem, the outcome of any actual disorder or discontent.

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Now let me pick more at random from my notebook. One morning, a few of us visited a Moscow court of law. It is a People's Court, a court of first instance, like a London police court, but of much wider jurisdiction. An adjourned case was about to come on, of a man had up for throwing his wife out of the window: his defence, it appeared, was that she was so hysterical that he could stand it no longer. We asked, through our interpreter, if something of the system could be explained to us. The court promptly adjourned, and we were ushered into a back room to meet the Bench. This consisted of the magistrate and two assistants. The magistrate was a young man of about thirty, singularly attractive and intelligent-looking. He had been elected to his position by the workers in a local factory. His term lasts for a year, but he can then be re-elected. The assistants are also elected, but only for a fortnight at a time. These two were a middle-aged woman with a kerchief round her head, and an elderly man. The assistants receive the same pay as in the factory, the magistrate about double.

We asked him whether he had any previous legal training. He answered no. There are special courses for magistrates, but in general one trusts one's 'class intuition.' However, a representative of the next higher or District Court attends the People's Court to watch and if necessary advise. And there is a right of appeal to the higher courts.

We asked about the delays of the law. He said that cases rarely waited more than eight or ten days before coming up for trial, usually three or four only ; most cases in his court were settled the day they came up, and rarely took more than two or three days. Although murder (for which the maximum penalty is ten years' imprisonment) came within his jurisdiction, complex cases such as a financial issue between two factories went at once to the District Courts.

I do not know if many Russian magistrates are of the type of this young man. If they are, we agreed that we would not mind much being tried according to 'class intuition' instead of by more ordinary procedure. But this is a large *if*!

Now let me take a very different scene—the summer pleasures of the river. It was a baking day in early August. I picked up an English acquaintance who is working in Moscow, and we went off twenty minutes' tram-ride from the

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centre of the city (a city of some 3,000,000 people) to where boats can be had on the Moscow river. Heading upstream under a bridge, we came at once abreast of the biggest and best-organized of Moscow's many bathing-places. For anything like this, I must confess, the British press had not prepared me. Diving-boards and chutes, enclosed pools (if you do not feel like venturing into the open river), tiers of seats beyond reaching up to a row of neat dressing-cabins (and behind these, as I saw on another visit, courts for tennis and volley-balls, where you can play in your ordinary clothes or in bathing-dress, as you prefer). But it was the people bathing who caught my attention. Almost all were deeply bronzed with the sun, and the great majority were of very fine physique. Little sign of surplus fat (it is perhaps a good thing not to be able always to eat as much as one would like), but no sign whatever of under-nourishment. Many of the girls wore just trunks and a brassière. None of our willowy, boyish figures—solid, robust, healthy, they swam and sunbathed and enjoyed themselves.

On the river a fleet of pleasure boats, and—a sight to gratify Mr. A. P. Herbert's eyes—frequent 'river-buses' plying up and down stream. A men's eight; a women's four; a

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strange raft-like object in which, eight-a-side, men and girls practised oarsmanship under a coach ; river police patrolling the stream and taking one rouble fines off those who infringed the rules of the river.

More bathing establishments, and many people bathing from the banks. Opposite the lovely wooded Lenin Hills—a sort of Hampstead Heath with a river thrown in—a new bathing-place where, separated only by a light fence, both men and women were bathing naked. It all seemed simple, natural, and pleasant (but perhaps it would not be pleasant in England until the physique of the average man and woman is up to that of the Russians).

CHAPTER II

RUSSIA AS A COMPROMISE

THERE are two mutually contradictory legends afloat in the world about Russia. One may be called the Bad Bolshevik legend. It asserts that the present Government of Russia is a corrupt and ignoble tyranny, interested solely in preserving power at all costs, and animated by all kinds of unpleasant (not to say pathological) motives, such as delight in cruelty, hatred of all that is best in the past, joy in destruction, megalomaniac hopes as to world revolution and equally megalomaniac suspicions of the attitude of other countries, political perfidy, and business dishonesty. Under this régime the mass of the people are shamelessly exploited for the benefit of the leaders, religion and art and the finer feelings in general are trampled upon, morality is either non-existent or else strongly discouraged, opposition is repressed with unscrupulous violence, the State control of trade is deliberately used to undermine the economic stability of other countries, and, though the con-

ditions of life are abominable and far worse than in any capitalist country, propaganda of the worst description is used to bamboozle the common herd.

The second and opposed legend may be styled the Roseate Russia legend. It maintains that the Russian people as a whole are infinitely better off than before the revolution, and that events are moving rapidly towards a state of things where the conditions of life will be much better than under any capitalist régime and the country as a whole will be the most prosperous and most powerful nation in the world. The Soviet Union, victim of the malignity of all the great capitalist Powers, has in self-defence to maintain an army against the constant threat of invasion. Production is increasing faster than it has ever advanced elsewhere. The new principle of collective farming is at last going to make the country as attractive as the town. The workers are being provided with clubs, theatres, education for themselves and their children, a fortnight's vacation, free medical attention, crèches, kindergartens, parks, sports grounds; if these privileges are not yet quite universal, they very shortly will be. Human relations, thanks to the reform of the code, are ideally free, without being unstable. To ensure the safety of

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the State and the country's economic development occasional fools, knaves, or villains must be arrested and put where they can do no harm ; but, in spite of all opposition, the progress of the country, thanks to the enthusiasm of the worker, outstrips even the optimism of the official plan. And so on.

The two legends are both false. Nor can the truth be arrived at by summing the two, for the truth is not a crude mixture of opposites but subtle and complicated ; in it black and white find their due place in a multi-coloured whole, good and bad turn out to be only partial aspects of a living reality.

For Russia to-day is a transition between a mediaeval past and a communist future, a compromise between a chaos and a plan, a mixture of expedience and principle. Over and over again you see evidences of this hybridity.

Then, too, the material and historical background helps to explain the present state of compromise. Tsarist Russia was in a different epoch from the rest of Europe. Indeed, it was in several different epochs. In its Court, its political system, its 'Society,' it was of the eighteenth century. In its industrial life and a good deal of its intellectual and artistic life, it stood in the early phase of the industrial revolution. Through

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the bulk of the interminable countryside, it was still in the Middle Ages.

Its peasants lived in mediaeval superstition and squalor ; its working class had scarcely begun to acquire any privileges save that of working long hours for low wages. Its monarchy was absolute, but its monarch so weak and superstitious as to be in the power of a Rasputin ; its Church both primitive and reactionary ; its bureaucracy the most ponderous in the world. The great majority of the population was illiterate ; facilities for education and recreation were all but non-existent ; drunkenness was rampant ; the mortality rate enormous.

Next, a chronological *aide-mémoire*. Serfdom was only abolished in 1861 ; 1914-17, war, with losses running into millions, and demoralization of the army ; 1917, March, the outbreak of revolution ; November, the Bolshevik revolution, war with Germany still continuing until March 1918. 1918, two internal revolts, attacks by British, French, Japanese, Czechs, and Baltic Republics ; the beginning of the Terror. 1919, desperate fighting on many fronts. 1919, the Polish War. War in Russia was only terminated two years after the end of the war in the West. As result, in 1920 equipment and production were at an inconceivably low level. Disease,

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especially typhus, was rampant, urban malnutrition almost universal. Yet it was at this time that electrification was planned and begun. 1921, the Kronstadt revolts; the seizure of power in Georgia by the Bolsheviks; the New Economic Policy; the Great Famine. External Trade, almost nil in 1920, rose to almost 10 per cent. of its pre-war value during 1922, and 20 per cent. during 1923; by 1925, general productivity was about 70 per cent. of pre-war, but in this year a grave economic and food crisis again occurred. In spite of this, the pre-war level has now been surpassed. Thus progress achieved must be judged by the level from which it started, and this was far below anything found in any other post-war nation. And political attitude must be judged in the light of the military and economic attacks made on the infant Republic. The bellicose utterances of the whole right wing of capitalism, combined with the forcible suppression of communism in many countries, give the Russian authorities every reason for recalling the aid given by France, Britain, Japan, Czecho-Slovakia, and Poland to the counter-revolution a dozen years ago. In such circumstances one has the right to a long memory. Hence the censorship; hence the arbitrary powers of the G.P.U.; hence the

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violent suppression of political or economic opposition ; hence, too, the tiresome military jargon of Russian economics, ' Progress on the tractor front,' and so on.

As for the actual fact of compromise, it is everywhere. There is compromise in regard to religion. The Government and the Communist Party are officially hostile to religion. Anti-religious societies exist with official encouragement ; there are anti-God museums paid for by the State in a number of large towns (unfortunately that in Moscow was closed for extensions during our stay). You can even buy anti-God playing-cards. Of the innumerable churches of pre-revolutionary Russia, some have been pulled down, some turned to various secular uses. We saw one, in a small manufacturing town, being used as a factory restaurant. From the river we saw a monastery, stripped of its surmounting crosses, serving as a reformatory for criminals. In the first Russian talkie, ' A Pass to Life,' is shown another monastery which has been turned into a workshop and school for the reclamation of some of the hordes of ragged children that were such a problem for several years. (These, by the way, have now almost disappeared. I counted myself lucky to get a snapshot of one in a Moscow street, contrasting forcibly with the

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traffic control light-signals in the background.) While we were in Moscow, the gold foil (worth tens of thousands of pounds) was being stripped from the Cathedral dome, prior to the pulling down of the whole of that very uninspiring nineteenth-century building to make way for the great central Palace of the Soviets, which is to be the largest hall in the world, seating 25,000 people. And many churches are now museums, clubs, meeting-halls, and so on.

Yet plenty of them still serve their original purpose. For instance, one close to our hotel in Leningrad was packed with worshippers, including a fair sprinkling of younger people, with a number of priests officiating in full canonicals. So long as a congregation exists willing to support a church and its priests, the church can remain open.

Then there is compromise in the realm of art and ideas. Let me describe what we saw at the end of an evening of opera at the Stanislavsky Theatre in Moscow. It was the finale of Tchaikovsky's *Eugene Onyegin*. Tanya had fallen in love, had sung her all-night soliloquy, had told her love—only to be repulsed. Onyegin had flirted with the girl whom his friend loved, had been challenged, had killed his friend in a duel. Tanya had married the old nobleman. The old

nobleman had melodiously declaimed to Onyegin all that his new-found happiness meant to him ; yet Onyegin had forced his way into Tanya's room and made love to her. She loved him still, but virtue triumphed ; and the curtain had just fallen on his foiled despair.

The audience was in raptures ; four times the curtain was raised, and the leading singers had bowed with bored hauteur ; and still the enthusiasts were crowding up towards the orchestra and clapping for more.

Could this be Russia, Soviet Russia in the third year of the Five Year Plan ? For never was there a more idealistically romantic libretto than Pushkin's story of aristocratic life a century ago, never more melodiously bourgeois music. Yet here was a Moscow audience crowding the theatre, drinking it in, asking for more. Of course, if one wished to remind oneself that this was Russia, a glance round at the audience sufficed. Here and there a rather pathetic attempt at smartness, but for the most part the girls in plain white sleeveless dresses, the men coatless, in cotton shirts open at the neck. Some of the girls were barelegged ; and a handsome man just behind us was in trousers and a sleeveless vest. They seemed a contented, cheerful crowd, simple and very orderly, and eager to

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catch every note. There were very few old or even middle-aged people.

In general, authority in Russia does not concern itself much with art save in so far as it is connected with ideas. Architecture is in general of a modernist type, partly because this is constructionally cheap and simple, partly as a gesture of breaking with the past. But the designs are often dull and second-rate compared with those of modern French, German, or American buildings.

In regard to furniture and decoration, on the other hand, there has apparently been no official guidance or control, with the result that the worst excesses of untrained taste are prevalent. The Government, for lack of taking thought, would here seem to have missed a real opportunity; for with its immense powers of propaganda and influence, a lead from above would have been decisive.

With the cinema, matters are different. Every one knows that since the war Russia has set a new standard of excellence, both in technique and artistic ideals, to the film world. Yet even here there are queer contrasts. The new level has been reached in a few great films. But these are not nearly enough to satisfy public demand, and in point of actual fact many, perhaps most,

cinema theatres in Russia to-day are showing American films, usually of low quality because they cannot afford to pay for the best ones.

Revolutionary Russia is a country of museums, and it is interesting to see the crowds of workers filing through the Hermitage and other art galleries. But the 'ideological' motive is strong here. Perhaps the majority of the visitors come in organized parties, conducted by a guide ; and the guides' explanations, though not directly propagandist, are of course all adapted to communist philosophy. In literature, a strong control is exerted owing to the simple fact that all the printing presses are under the State. So far as a visitor can judge from careful enquiry, much good work is being turned out within the fairly wide limits prescribed by this control, but also a great deal of second-rate stuff is published because of its 'ideological content' or its propaganda value, with little reference to its literary merit.

In the theatre, most of the modern productions must have this bias of ideas if they are to be staged. We saw a popular comedy called *The West makes you Nervous* in the theatre of the Park of Culture, which, while most cleverly staged and acted, and with some excellent situations, was largely vitiated as a play by its over-

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obvious propaganda and the constant insertion of long and tendencious political discussions in the dialogue. On the other hand, the prestige of the old, especially in opera, is so great that it is allowed to continue, though doubtless with much heart-burning on the part of the real Simon Pures of communist orthodoxy. The scene I have described at the close of *Eugene Onyegin* shows what a safety-valve for the romantic emotions is thus happily provided.

At the moment, the attitude to art in Russia would appear to be determined by a number of curiously contradictory attitudes. There is a strong puritanical feeling (the frequent companion of fanaticism or crusading zeal) among enthusiastic communists. There is a feeling that art is a bourgeois plaything, and yet that it is extremely educative. Orthodox Marxist philosophy, on the other hand, implies that art has a valuable function to play in the State, but that great art will not arise except when the artist feels himself in a vital relation with society ; so that the best brains in the party feel that the Government has a duty to perform in trying to build a type of society which shall stimulate art, and establish this vital relation between the artist and the community. And finally there are the numerous second-best brains who see in art

only a toy or else a means of putting an idea across, and are doing their best to turn art into propaganda. The result is at the moment somewhat chaotic (though certainly not more so than in other western countries). But perhaps one day, when the economic rigours of the present are overpast, a new and distinctive art will be born in Russia.

Then, again, the prescription of a philosophic and political orthodoxy and the concentration of publishing and censorship in State hands leads to a strangely one-sided outlook, which is really a compromise between rigid orthodoxy and a genuine passion for knowledge. I was told on high authority that Mr. Wells's *Outline of History*, in spite of its many merits, could not be translated into Russian because a too copious commentary would have been needed to 'explain' it to communist readers, and the result would have been confusing. One wonders sometimes just what would happen if young Communism were suddenly subjected to all the blasts of doctrine current in other countries. Perhaps freedom of ideas is confusing after all.

Another compromise is the existence of the private market. Ideally, the distribution of goods in Russia ought to be undertaken by large-scale trading organizations controlled or regu-

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lated by the State. The best known of these are the Co-operatives, but of late years an increasing number of others have grown up for dealing in various special commodities.

But this has not, as a matter of fact, sufficed, especially as regards foodstuffs. So long as collective farming was not general, individual peasants would wish to sell their goods in the open market. And so long as the supply of food was inadequate to the demand, it would often be to the interest of individuals who could buy rationed foodstuffs at standard cheap rates in the Co-operatives to take their rations and sell them at much higher prices in the open market.

Accordingly the early trains into Moscow are crowded with peasant women bringing in a few gallons of milk to sell. They may have to spend a couple of hours each way getting in and out ; but what is time to an old-style Russian peasant ? So long as there is a milk shortage, this will continue. It will stop only when there are sufficient State and collective dairy farms near the city, properly equipped with motor transport, which can bring in such large quantities of milk at standard rates that petty profiteering by individuals will no longer pay.

And the Government has to sanction the existence of open markets. One morning I visited the

biggest of those in Moscow, in Arbat Square. (One is, by the way, always being told that foreign visitors are not allowed to see anything but what officialdom wants them to see. In point of fact, however, the visitor is as free to ramble about Moscow as he would be to ramble about London. I went by myself on a tram, and wandered freely about the market, taking pictures with a cinema camera, without any interference.) It must be confessed that it was distinctly unattractive. Dingy rows of stalls, with narrow passages between: beyond, men and women squatting in front of the produce they had brought—here eggs, there vegetables, here again potatoes; a few carts belonging to *kulaks*, laden with vegetables; a row of cobblers; a few sellers of mushrooms and flowers.

The most interesting part, however, was an open space where the vendors were not peasants, and were walking about offering some very small quantity of food for sale. A big-built factory worker was holding out about a pound of raw meat, half unwrapped from its covering of old newspaper; a neatly-dressed woman, probably a typist in some office, had three eggs, which she proffered in her open hand-bag; an old man was trying to sell two small dried fish; another woman had half a pound of butter. These were

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city workers who, having bought their supplies at the Co-operatives on their ration cards, were now trying to get money for some luxury by selling them in the open market, where they could get four or five times as much as what they paid for them.

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Often the compromise is simply between what the authorities would like to do and what they can afford to do. For instance, wanting to make the best use of my time while unavoidably detained in Moscow for some days, I made application to be shown a factory. As I only could spare a morning, it had to be near the centre of town, and I presume it was for this reason that I was sent, with an interpreter, to the 'Red Rose' textile factory. For although this deals, and deals pretty efficiently, with higher quality textile goods, it is still housed in very shabby buildings and works mostly with pre-war machinery. It is, of course, the heavy industries which receive preferential treatment at the moment: it will not be until after the completion of the Five Year Plan that a factory dealing with a light industry, and with somewhat of a 'luxury' bias, can hope for much new capital for reorganization.

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Just inside the door (which, as in most factories, was guarded by a sentry with fixed bayonet) was a strange object in the form of a huge bottle, about ten feet high, surmounted by a cork in the form of a drunkard's head. In one side of it was a hole with jagged edges, simulating a break in the bottle. I asked why ? and what ? and was informed that this was the drunk's pay-desk. On pay-day, habitual drunkards, absentees, and shirkers do not receive their pay at the ordinary desk close by, but must get it from a special cashier ensconced within the bottle ! This is certainly treating your employees like schoolboys ; but perhaps it is better to treat them like schoolboys rather than like mere cogs in a machine.

In passing, the bottle was a reminder of another compromise in present-day Russia—the compromise over drink. In the early days of the revolution, the manufacture and sale of vodka was prohibited. But the sacrifice of revenue which this involved was so great that the prohibition was later cancelled. Since then, there has been witnessed the strange spectacle of the State, in the person of its alcohol-manufacturing organizations, zealously promoting the manufacture and sale of vodka, and, in the person of its Health Commissariat and those responsible for

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the efficiency of labour, conducting a campaign against intemperance. All one can say is that the situation is not nearly so ridiculous as in the United States, and that at least the profits from drink all go to help the State, instead of being in large part diverted into private pockets.

But to go back to the factory. The buildings were certainly in a very poor state, and the accommodation for workers (they try to put up as many hands as possible, owing to the housing shortage in the city) very crowded. All the same, they had managed to provide the various facilities which are the due of the post-revolutionary proletarian. We walked through the restaurant. Crowded and noisy it was ; but the workers were getting unlimited quantities of cabbage soup, and a big plate of meat, potatoes, and vegetable marrow for the absurdly low price of 35 kopeks (7d. nominal, actually much less). Then there was a building converted into a club, with gymnasium (with rifles), reading-room, military room (with gas-masks, wall diagrams of bombs, etc.), a recreation-room, a room for meetings, and both an indoor and an outdoor theatre. There was a crèche for the babies of women workers, and a kindergarten for the children from four to seven, rather makeshift and primitive, but working all right, and staffed by very

pleasant-looking and enthusiastic women and girls. There were hardly any children in the kindergarten, because most of them had been sent away to a kindergarten in the country for the three summer months.

Finally, I was taken to see the unmarried women's quarters. Most of the workers were women, and I had noticed as I went round the mill that a large number of them were middle-aged or elderly, survivors from pre-revolutionary days, mostly a little sad-faced but resigned. Owing to lack of space the unmarried women could not be given separate rooms, and they were housed in dormitories, on two entire floors of an old building, about fifty beds to each floor. It was a strange sight. The beds, very high, and I must say looking very comfortable, in rows. At the foot of each bed a collection of trunks and huge wooden chests containing all their owners' possessions. A few of the women sitting about, gossiping, or tidying up, or mending clothes. At the end of the room was the inevitable 'Red Corner' with its portrait of Lenin, its red draperies, its slogans, and a few tables and chairs and newspapers. Yet the great majority of the beds had ikons at their head.

We looked into the married quarters too. Only one room per family. The room we saw

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was as crowded with photographic enlargements, knick-knacks, and cheap lace curtains as it would have been in an English factory-town; and the middle-aged energetic woman was as apologetic about her not having quite tidied it up for the day as would have been her counterpart in a bourgeois country.

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The existence of these multiple contradictions, and their existence within a planned State, means that one must be constantly on one's guard in judging any isolated piece of news about Russia at its face value. The realization of a year's planning programme with a margin to spare; the lamentations over the inefficiency of labour, the high wastage of machinery, or the inadequacy of the railways; the triumph of collectivized farming; the miseries of the persecuted *kulak*; the completion of huge hydro-electric plants and town-planning schemes; the constant shortage of food and comforts—all these are facts, and yet none have meaning except in relation to the growth and travail of the whole vast organism.

So far, there has been, through all the oscillations, a steady upward trend: each year of progress has of course a cumulative effect upon the

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future. At the moment, however, Russia is faced with a grave crisis, this time external and not internal. The slump in world prices has so reduced the value of her exports that it will be exceedingly difficult, perhaps impossible, for her to pay for the imports of machinery and technical skill needed for her planning programme. It is indeed an irony that the crisis of the capitalist world triumphantly commented on by the Soviet press as a story with a communist moral, should be bringing on a crisis in Russia's communist affairs. However, even if completion of the Five Year Plan should have to be postponed for this cause, it need by no means imply its failure. Psychologically, it would be a serious blow ; but economically only a temporary setback, or at worst a permanent slackening of tempo.

At all events, the régime has no appearance of instability, and it has managed, both in industry and agriculture, to lay down the grandiose lines of a wholly new organization, arising out of the ideas in the minds of Lenin and his fellow-Marxists.

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Communist Russia is organized on lines quite alien to those of the rest of the world. In many

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respects the visitor must grow accustomed to standing, intellectually speaking, on his head; for many of the fundamental ideas of the country are opposed to all his preconceived thinking. Yet the people he meets are just human beings. But the precise expression of their feelings and thoughts is different from his own, partly because of inherent differences in racial temperament, but mainly because the new conditions are generating a new outlook, are modifying the human type.

And whether or no he agrees with the ideas behind the revolution or the policy employed in carrying them into effect, he must admit that in spite of all its difficulties, communist Russia is a going concern, thoroughly alive, which has survived grave hardships in the past and is prepared to endure more for the realization of its Plan.

CHAPTER III

THIS PLANNING BUSINESS

WHATEVER a man's political or moral or religious opinions may be about Russia, he cannot escape one conclusion—that Russia is engaged upon an enormous experiment. It is an experiment still in progress, an experiment designed to test out certain ideas arrived at by that strange exiled theorist Marx as to the structure and evolution of human societies, a laborious experiment which cannot, for another generation at least, give any adequate answer to the question asked of it. The experiment is on a more ambitious scale than any other yet attempted ; for it is seeking, within the space of a few decades, to remodel the destinies of one-sixth of the habitable globe. And it is new in quality ; it is deliberately endeavouring to build up a new kind of social organization, different in type from any that has so far existed in the past.

Russian affairs, of course, also have a political aspect, and a patriotic aspect, and an aspect of fanatical devotion which may perhaps be called

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religious. But under one aspect, and that perhaps in the long run the most important, Russia remains a scientific experiment, and the only one ever yet carried out in such a field and on such a scale.

If the visitor to Russia is to appreciate the meaning of this experiment, he must first of all have some appreciation of the meaning of experimentation in general. For a scientific experiment implies that you are putting a question to nature.

There are plenty of people, and people in important positions, who have no real conception of an experiment. They include politicians as well as philosophers, business men as well as artists. They are not interested in putting their ideas to a test, but in spreading them abroad ; they prefer opinions to scientific principles, and are concerned with propaganda rather than with experiment. Others may bring an open mind, but because they have not realized that Russia is a large-scale experiment, designed to test in practice various conclusions reached by Marx and his followers concerning the structure and development of industrial societies, they will miss a great deal of the significance of what they see. They will judge Russia in regard to more or less superficial and temporary facts : the precise

wages of the workers, the crowding of the trams, the shortage of boots or butter, the low standard of sanitary convenience, the total volume of trade, and so forth. Whereas they ought to be judging, first by the direction in which events are moving instead of by their precise state at present ; and secondly, by the scientific efficacy of the experiment—whether or no it has been properly planned so as to give a real answer to the question put to it, and not merely a jumble of confused half-answers, each capable of a dozen different interpretations.

In the last few years the interest of the rest of the world in Russia has largely centred in the Five Year Plan. Its ambitious rate of progress, the huge scale of many of the enterprises which have been launched under its auspices, the sporting interest aroused by the race between practical results and paper planning, its immediate influence upon other countries—all these have held the world's attention.

But while the Five Year Plan is without doubt of the greatest importance, it is in a sense only an incident, only a symptom. It is an incident in a long series of plans ; it is a symptom of a new spirit, the spirit of science introduced into politics and industry.

The Five Year Plan is but an incident. For

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when, after two more years, it comes to an end, it is to be succeeded by a Ten Year Plan, which in broad outlines is already complete. And undoubtedly this will be succeeded by other plans in due course.

The Director of the Institute of Plant Industry, while explaining to our party the schemes of the Institute, said, 'So you will see it would be quite easy to frame a Hundred Year Plan for Russian agriculture, and if it could be extended to world agriculture, perhaps a Thousand Year Plan.' He spoke half-jokingly; but nevertheless his remark illustrates this idea of long-range planning which permeates the minds of those at the head of affairs in Russia to-day.

Meanwhile, though every one knows that war debts and reparations hang like a millstone round the neck of international trade in capitalist countries, so far the only effect of the crisis on this question has been President Hoover's initiative in obtaining a One Year moratorium.

More important still, the Five Year Plan is only a symptom. It heralds the birth of a new kind of society, a society which is coherently planned, and has not, like Topsy and the out-of-hand individualisms that constitute our Western nations, 'jest grewed.'

The economic aspect of planning is that which

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has not unnaturally struck most observers. But there is another aspect which is more basic—I mean the scientific aspect. For proper planning is itself the application of scientific method to human affairs; and also it demands for pure science a very large and special position in society.

Science is an essential part of the Russian plan. Marxist philosophy is largely based upon natural science. Its outlook is what we should call mechanistic, and mechanistic in a very broad sense (although by an unfortunate inversion of terms, its official designation of ‘dialectical materialism’ has meant the affixing of the materialist label). Not only does it assert that the method of science is the only method in the long run for bringing phenomena under our control, not only does it assert that this is applicable to social as to biological or physical phenomena, but it asserts that the scientific attitude must form part of the communists’ general outlook.

Marxism is nothing if not consistent. It insists upon ‘the altogetherness of things,’ and so finds it impossible in the long run to separate theory from practice, or philosophy from politics, science, or administration. It was Marx himself who made the admirable remark that, whereas

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philosophy hitherto had merely set out to explain the world, communist philosophy must aspire to change it. Lenin, when in exile and unable to take a hand in the practical side of things, devoted himself to writing a large philosophical work, *Materialism and Empirio-criticism*, which, in spite of its truculent polemics and its sometimes not very profound philosophical judgment, did in fact play an important part in consolidating communist principles and in giving the party the driving force of a coherent body of general ideas, as well as demonstrating the notable passion for philosophy of a man distinguished above all for his practical statesmanship, his power of adjusting abstract theory to hard facts without surrender of general principle.

Viewed in the light of this general Marxist philosophy, science, like every other human function, has a dual aspect. On the one hand it influences human life and the destiny of society ; but on the other it is seen as a social phenomenon, its tendencies and its achievements not blossoming out of nowhere in the brains of isolated men of genius, but determined by the social and economic environment of the time. In parenthesis, this approach can of course be applied to other human activities. By no means the least interesting of my experiences in Russia was a

discussion on the philosophy of art, the absolute-ness or otherwise of aesthetic values, and the relation of the artist to society. It was after a reception in the big Athletic Stadium. Supper finished, we went out to drink coffee on the terrace, and Bukharin and I got immersed in this discussion. Radek soon came up and joined us, so that I found myself pitted against two of the best all-round brains in Russia. We went at it (on the neutral ground of the German language) till midnight, surrounded by a large circle of listeners ; and I must confess that, though I did not agree with all the implications of the Marxist view, I ended by finding myself in possession of new ideas as to the position of the artist in society.

So wholeheartedly do the Russians embrace their attitude towards science that they have recently held conferences on the planning of science itself, and on the planning of Planning. The reports of these conferences have only just been published, so that it is too early to judge of their effects. But it is at least interesting to find that while we in this country, although we have a ' National ' Government, are still altogether without a national plan, even on paper, the Russians have already got beyond the mere fact of large-scale planning to the realization that

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planning itself has principles to be studied and a technique to be improved. It is also interesting to find that whereas in Britain one of the heaviest sufferers under the economy axe was scientific research ; in Russia, in spite of their average economic standard being so much lower than ours, a far larger proportion of the national income is assigned to science than was the case with us even during times of prosperity.

To take but one example, the Soviet Government's annual appropriation for its Geological Survey is larger than the expenditure of all the other nations of Europe lumped together on theirs. It is the nominal equivalent of £600,000 a year. Granted that the area of U.S.S.R. is vast and that they have much to catch up, geologically speaking, on other nations ; yet in the difficult state of the country's finances, that sum is a very large one.

Let me give some illustrations from what I actually saw. I will begin with the Institute of Plant Industry, whose Director, Vavilov, is a botanist of international reputation. The Institute is a vast affair, with one branch in Leningrad, but its central field-plots and experimental work some twenty miles out in the country. The housing of the two branches is worth mention. That in Leningrad is lodged in a very beautiful

building which had previously belonged to a rich nobleman. Many of the rooms have the most exquisite wall-paintings, which though doubtless pleasant to contemplate in the intervals of work, are in certain respects inconvenient, since the Fine Arts Commission is very strict and will not allow a single drawing-pin in them, or even permit them to be hidden by bookcases or wall-charts.

The home of the field-station, on the other hand, was quite different. We drove up to a large half-timbered house that might have been transplanted from Wimbledon or Weybridge. 'How Victorian!' I said to Vavilov as we entered. 'You are perfectly correct,' he answered. 'The house was given, complete, by Queen Victoria as a present to one of the Russian Grand Dukes in 1887.'

But that is not the end. As we were going through the grounds, an assistant drew my attention to a couple of sheds. Elaborate experiments were being carried out here as to the effect on plants of artificially shortening or lengthening their hours of daylight, and truckfuls of plants which had to go to bed early were wheeled into these sheds and shut away from the light. Proposals for the erection of the sheds were submitted in 1923. This was agreed to; but the

Fine Arts Commission insisted that the sheds should be erected in the same Victorian style as the house, even though this cost twice as much as the original estimate. And yet Russia has been accused of iconoclasm !

Another little incident was interesting. As I came out of one of the experimental green-houses, I noticed that the large flagstones on which I was stepping bore the one word, 'Brandy.' I enquired the significance of this, and was told that the stone was the gravestone of one of the Imperial family's dogs. In the grounds of the palace of Tsarskoe Selo, near by, had been a large graveyard entirely reserved for dogs, with a statuary group, of a symbolic mother dog and her little ones, in the centre. Since the revolution this had provided some useful building material.

From this description it might be supposed that the Institute is purely practical in its aims, a sort of glorified State Farm for getting cheap wheat or cheap potatoes as quickly as possible, and without any interest in pure science or fundamental research. And this idea might well be strengthened when the visitor to Russia discovers that orthodox communism, following Marx, makes no distinction between pure and applied science, but considers all science as being in the long run determined by economic needs.

This, however, would be a complete mistake. What we call pure science is by no means stifled in Russia by utilitarian aims, and the Institute of Plant Industry, in addition to its definitely practical tasks, is engaged upon much research of the most abstruse and fundamental nature.

Later, I visited the Scientific Planning Department of the Supreme Economic Council—an office more or less equivalent to our Department of Scientific and Industrial Research, save that in Russia the Department deals with all of industry, and with the great bulk of pure scientific work in the fields of Physics, Chemistry, and Engineering. Bukharin is the head of the Department, and he explained to me at some length the official attitude in the matter. Briefly it was as follows. The Marxists believe that in the long run all science is practical, and that it should be made to serve practical needs as thoroughly and as quickly as possible. But, secondly, they are perfectly aware that, in the long run again, science will not bear practical fruit unless it first turns its attention to pure research, remote from immediate practice ends—deliberately disregarding practical ends for the time. Thirdly, they are aiming at a practical application of science on a larger scale than any other country: they are of fixed purpose setting out to base their

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agriculture, their industry, their mining, the health of their people, their whole national life, upon science. And accordingly they feel that in this process so many fundamental questions will crop up, that to answer them they will need not less pure science, but more. And therefore, as fast as resources permit, they are preparing to increase expenditure on pure scientific research to a scale far beyond that attempted in any capitalist country.

Again, what a contrast with this country. Since Mr. Snowden's budget the air is filled with lamentations over this or that cut in wages, dole, or salary ; but the enormous cuts in scientific research have hardly even been mentioned.

The first thing that strikes one about the Institute of Plant Industry is its huge size. Like a number of other scientific institutions in Soviet Russia, it comprises several hundred research workers, and at least an equal number of technical assistants. There is a department for the improvement of field crops, where you may see new types of plants being manufactured (by means of scientific crossing and selection), and both they and many old types being scientifically tested (by being grown under different conditions). Here are new varieties of flax, destined to provide the raw material for the chain of linen factories

now being built along the country's western border. With these, Vavilov hopes that Russia will rival and even excel Irish linen, and perhaps reach the quality attained in the linen robes in which were wrapped the mummied Pharaohs of ancient Egypt. Here is a field of sunflowers, which are largely grown in Russia for the oil in their seeds. Behind plots of hemp stand patches of bright dahlias, which are being tried out for their nutritious tuber-like roots. (It is worth recalling that they were first brought to Europe in the eighteenth century for this utilitarian reason: it was only later that they began to be grown for the beauty of their flowers.) Girls are busy crossing different varieties of flax, and tying up the cross-fertilized flowers in little muslin bags to prevent casual visits by bees. There are acres of peas, and beans, and soya.

There are large areas devoted to testing out the huge collection of seeds of wheat and barley and oats which Vavilov's expeditions brought back from all over the globe. Of wheat alone, the Institute possesses 28,000 varieties, and these are being sown out to test their cropping properties, while in the central building at Leningrad dried specimens of every known cereal are preserved. Any one wanting to make a special study of cereals *must* come to Leningrad, for

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the Institute's collection is by far the largest in existence.

Then there is the work I have already just mentioned, on the effect of the length of the day upon plants. This is of very great importance in Russia, whose territory extends from the arctic to the sub-tropics. To take but one example, the potato plant hardly produces any potatoes when days are long and nights are short, as in high latitudes in summer; but in the same latitude, putting it to bed early makes it grow a fine crop of tubers. Through these experiments it is now possible to say which are the best regions for different varieties of potatoes, and the best seasons for planting them.

Here is a greenhouse where plants are grown in an artificial hot wind, to study their suitability for the semi-desert conditions of Central Asia; here a specialist in plant heredity, by means of a new method which he is perfecting, is securing a number of new and true-breeding hybrids. One he has at present is a cross between a radish and a cabbage; this unfortunately is of no commercial value, but the method is likely to yield important results in the long run.

The Institute is looking into methods of sowing rice by aeroplane; it is studying the exact way in which plants react to waterlogged soils, and

mapping the microscopic bodies or chromosomes which carry the physical inheritance of living things. And it is sending out large numbers of botanical expeditions to study the plant resources of Russia and neighbouring countries. A few years ago, Afghanistan was thoroughly explored, and the results enshrined in two large volumes, which are of great value geographically as well as botanically. Recently, within the confines of Russia itself there has been discovered a plant which may well repay many hundredfold all the expenses of these expeditions. We saw specimens of it at the Institute. It is a small composite, called *Scorzonera*, from Turkestan. The local inhabitants use its juice for gum : and it appears probable that it may be made to yield commercial rubber. As rubber is the one important raw material which is not found within the confines of the U.S.S.R., the possibilities latent in this discovery need no stressing. Even the United States, with its vast quantity and variety of resources, must send abroad for its rubber.

Before leaving the Institute of Plant Industry altogether, I must say a word about the methods available for applying to practical agriculture the knowledge gained at the Institute.

It is a well-known and unfortunate fact that in most countries there is a serious lag in the

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application of science to practice. This is partly due to ignorance, prejudice, or other obstacles to the spread of new ideas, but largely also to an economic reason—namely, the expense of testing out the results of laboratory research on a commercial scale, and of adapting them to the fundamental necessity of making them pay.

In Russia, the liaison between science and practice is organized so as to get over this difficulty as far as possible. For instance, in connection with agricultural research, the Institute of Plant Industry possesses a number of provincial Experiment Stations. And these in their turn are in touch with the Collective Farms, State or otherwise, of the region, most of which set aside a plot of land for experimental purposes. These experimental plots are looked after by 'shock brigades' from the workers on the farm—*i.e.* workers who band themselves together to give some of their spare time to helping the work of the place.

If the Institute of Plant Industry has a new variety of wheat or rye or cotton which it wants tested out, it sends it to the appropriate Experiment Stations for preliminary testing, and they in their turn pass it on for detailed testing on scores or hundreds of collective farms. Thus the

new type is tried out, not on a few acres, but on a very large scale and under a great variety of conditions.

The same sort of thing happens in industry. Here again there exist a few central institutions, where the fundamental research is done, together often with the first stages of its practical application. In physics, for instance, there is the Institute of Pure and Applied Physics, under Joffé, which has three hundred research workers, and a workshop, employing two hundred assistants, for manufacturing apparatus. In it are being investigated on the one hand fundamental questions bearing on the structure of matter, or the physical nature of the bizarre rays which, as Gurvich, another Russian, showed, are emitted by onion roots and frogs' muscles and have the power of stimulating other cells to divide; and on the other hand, problems arising directly out of works experience and bearing directly on works improvement. In addition, there are institutes for special branches of more or less applied research—a huge Electro-technical Institute, for example, for work on high tension electricity and many other branches of electrical engineering; and an Aero-dynamical Institute for research in aviation. And finally, every large factory has its own Works Laboratory where

detailed adaptation of the results of research to industrial needs can be undertaken.

And so I might continue. In Professor Koltsov's Institute for Experimental Biology are being studied the most abstruse problems—of heredity in fruit-flies, of the physiology of development in salamanders, and so on ; while at the same time, since the Institute is responsible to the Commissariat of Health, it tackles problems bearing on cancer and on the inheritance of human disease.

Sometimes the insistence on practical application is not without its humorous side. Zavadovsky in the Institute of Neuro-Humoral Physiology at Moscow has considerably advanced our theoretical knowledge of the ductless glands by his experiments with thyroid extract on birds. But, *inter alia*, he has found that a certain dose of thyroid causes moulting, and so has had assigned to him a flock of one hundred geese on a State farm, on which he may experiment to see whether the feather-bed industry cannot be benefited by causing geese to moult four times a year.

There are, however, still other methods of liaison between theoretical and practical, and they are in some ways the most interesting, for they concern the recruitment of personnel and

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the interesting of the workers in scientific method. But these I shall deal with in the section of Chapter IV, which deals with education.

As regards the scientific situation in general, Russia in respect of most branches of pure science is in the first rank, and is turning out new and fundamental research work at a great rate. It is, however, rather curious that in Biochemistry and Physiology (with the exception of the brilliant work of Pavlov on the brain) Russia on the whole seems to be behindhand. It is curious, because health plays a prominent part in the Russian plan, the total expenditure on health measures in the U.S.S.R. now running to about a thousand million roubles a year, and because in the long run advance in health can only proceed on the basis of physiological and biochemical research. However, it may be urged that there was so much to do in improving the health of the country in accord with existing knowledge that up to the present attention has been concentrated on this very praiseworthy aim.

Be that as it may, the health service in Russia is very interesting. When it was established, it had two urgent tasks. One was to reduce the very high death-rate prevalent throughout the country before the war, especially among young children ; the other was to get under control the

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terrible outbreaks of epidemic disease, notably typhus, which swept across Russia in the trail of civil war and famine during the early years of the revolution. This latter task has been largely accomplished. Typhus has almost disappeared ; Russia now suffers only from epidemics which, like influenza, wreak havoc also in the most bourgeois countries.

With regard to mortality and general health, the situation has also changed markedly for the better. Looking at the people in the streets of Moscow and Leningrad, and still more in the country districts, I got the impression of a population not at all undernourished, and at a level of physique and general health rather above that to be seen in England.

We hear a great deal of the overcrowding in Moscow ; and undoubtedly it is very bad. But in spite of overcrowding and food queues, the revolution must have ameliorated the conditions of life for the bulk of the population, since the Moscow mortality rate, which in 1913 was 23·1 per thousand, has now dropped to below 13, while the infant mortality rate has fallen from 27 to 12 per cent. Indeed, all over Russia, both the general death-rate and the infant mortality rate have declined, and declined to such an extent as to more than counterbalance the slight drop

in the birth-rate. As result, the natural increase of the population is to-day greater than it was in 1913—a striking contrast with the state of affairs in all other Western nations. The population under Soviet rule is now going up to the tune of three millions every year. In fact, European Russia is the only large country inhabited by the white race which is still increasing rapidly in numbers.

It may seem surprising that the birth-rate has gone down so little, since in Russia there is no ban on birth-control information, and abortion up to three months is legal (and as performed by trained surgeons in properly equipped hospitals is a minor operation, in contrast with the dangerous business it becomes when driven underground into the hands of unscrupulous quacks or unskilled old women). But although in the big cities abortion is fairly widespread—in Moscow, for instance, the number of abortions carried out last year under State auspices only was nearly 70,000, which was a little more than the number of births—it is as yet much less practised in the country districts; and it is only in the last year or two that clinics and health centres have begun to disseminate information about birth-control on any large scale. Accordingly I think it is likely that within a few years

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there will be a considerable drop in the birth-rate, and Russia will here fall into line with capitalist countries.

As regards medicine, our party, which was largely composed of medical men, had special facilities for seeing medical work. The general impression gained from seeing a number of hospitals, clinics, and health departments at work was a mixed one. The hospitals were usually well equipped with apparatus, often very elaborate apparatus. They did not seem to be understaffed, and their organization seemed to be running quite smoothly. On the other hand they were, by our standards, crowded: this, doubtless, like the domestic overcrowding in such places as Moscow, is due to the huge influx of people into the big industrial centres.

There was a dearth of certain important medical supplies, notably anaesthetics and rubber gloves. As a result, makeshift antiseptic precautions were often in force, and many operations which with us would be performed under general anaesthesia were in Russia being done under a local anaesthetic or no anaesthetic at all. For instance, the gynaecologists in our party were astonished to find that in the official abortion clinic, no anaesthesia at all was employed, and the women were allowed to go home after what

seemed a very insufficient period of rest and recuperation.

However, the authorities insisted that the results were more than satisfactory. And one must remember that the ordinary Russian, man and woman, is of fine physique, and extremely tough and resistant. One meets with the same toughness among certain primitive peoples: I remember seeing in Tanganyika, at a maternity clinic for black mothers, women up and about the day after having given birth to a child; and I was told by the able American woman doctor in charge that keeping them in bed in orthodox medical fashion merely made them bored, and was on the whole actually bad for them.

When it came to the children's clinics and crèches the standard was higher. Even here there were shortcomings: the buildings were sometimes unsuitable, the equipment rather primitive, the flies not always kept out as they should be. But skill and devotion were everywhere in evidence, and the tangible results, in the shape of the children themselves, were splendid—magnificent, chubby, firm-fleshed babies: cheerful, healthy boys and girls. Our medical experts were of the general opinion that the Moscow child, in its physique, general health, and state of teeth, compared favourably with

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the average of English children, in town or in country.

Then the Central Institute for the Protection of Mother and Child is a very remarkable organization. Its propaganda posters and diagrams and broadsheets, which it sends all over the Union, are quite admirable ; and it is very busy with the important task of training doctors from outlying districts in pre-natal and child welfare methods. They come to the Institute in Moscow for a course of special training, which is given in connection with the large clinic attached to the Institute, and then go out to carry on their work in remote parts of the country.

The general impression of Russian medical work is not unlike that which one gets of Russian industry. In actual standards and level of achievement it is below ours. It is confronted with serious problems for the future, such as the recruitment and training of personnel (the training of nurses in Russia, for instance, is far less exacting than with us, and yet the demand is for more and ever more), and the ignorance, superstition, and rudimentary hygienic habits of the great bulk of the population. But the ordinary worker is guaranteed the best medical care when he is ill. The medical service has already done a great deal for general health : its movement is

upward : and it is planned on a grand and comprehensive scale, with audacious vision.

Visitors to Russia are always told on their return that they have been allowed to see only what the Soviet authorities wanted them to see, and nothing else. This, however, was certainly not true of our party. Some of the medical men, not wishing to see the purely scientific institutions on our programme, arranged matters as follows :—They got from our interpreter the names of various hospitals and directions how to reach them. Going off by themselves on the tram, they simply invaded this or that hospital, waited until some one was produced who could speak English, French, or German, and then asked to be taken round—a request which was invariably granted. Thus many of their impressions were based on the everyday routine of ordinary institutions, not on pre-arranged visits to show places.

There is still a great deal to be done in the field of public health in Russia. In the heat of summer, flies and dust both become very bad ; typhoid fever in certain districts (such as Lenin-grad itself) is far too prevalent ; most of the sanitary habits of the average Russian are very primitive—though no more so than were those of Western Europe in the eighteenth century ;

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although in some shops food is kept scrupulously clean, in the private markets there is every facility provided for the spread of germs and dirt. Yet in spite of all this, the achievements of the last ten years are truly remarkable, for Russia has been raised from a famine-stricken, plague-ridden country of mediaeval habits to one whose health is near the general level of other European nations: and the effects of the Government's health policy are most apparent where they will have the greatest effect—among the children. If the Russian experiment succeeds, Russia in twenty years' time will have not only a very good medical service, but—what does not always follow—a very healthy population.

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One of the great difficulties encountered by Russia in carrying out her plan is the absence of scientific spirit and of mechanical aptitude among the bulk of the people. With three-quarters of your population made up of primitive peasants who believed that a thunderstorm was due to the prophet Elijah driving over the clouds in his chariot, and were accustomed to turn to the priests when the weather or the crops went wrong, you could hardly expect a scientific atti-

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tude of mind; and with motor vehicles and machinery of all kinds as scarce as they were in pre-revolutionary Russia, you could not expect to find the rising generation fond of mechanical tinkering or used to the ways of machines.

Various measures are being taken to remedy these deficiencies: I shall deal with some of them later in talking of education. Attempts, however, are also being made to disseminate new ideas to the masses by way of popularization, through broadcasting, cheap popular books, museums and exhibitions. Pictures and exhibitions of machines greet you everywhere. Even in the gallery of modern French art in Moscow (which, thanks to two pre-war merchant collectors, contains perhaps the finest collection of modern French paintings in the world), placards with pictures of tractors confront you in the entrance-hall as you are preparing your mind for the Gauguins and the Monets. In the Park of Culture and Rest in Moscow there is a permanent exhibition of different kinds of machinery, with elaborate diagrams to make it all clear; and there seems always to be a string of interested people studiously mechanizing their ideas.

In the biological sphere the scientific spirit is just as important as in the physical or mechanical. Here too propaganda is very busy. I have spoken

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of the admirable posters connected with maternal and child welfare. Veterinary science too is much boosted ; for instance, in the Park of Culture and Rest, exhibitions of the highly realistic posters and diagrams about the improvement and the diseases of live-stock is almost (though definitely not quite) as prominent as that concerning machinery.

In this field the work of two museums happened to come under my personal notice. The first of them was the Darwin Museum, founded and carried on by Professor Kohts. This has two special features. For one thing, it has had at its disposal the services of a first-rate painter and sculptor, so that the collections demonstrating the ordinary evidences for evolution are displayed against a background of really beautiful scenes of animal life, and of fine sculptures, especially of apes and prehistoric man, together with colossal busts of famous biologists and paintings of incidents in their lives. In the second place, none of the specimens are labelled, and all the cases are open : the museum is designed so that its contents may be personally demonstrated and handled. And as a matter of fact, most of the Director's time is taken up in conducting parties round the place and lecturing to them on evolution. These parties are of very

varied nature. School-teachers and students one might expect: but there also come groups of soldiers, of Red Army officers, of Kalmuks from the steppes.

There is another Museum of Evolution in Moscow, organized by Professor Zavodovsky. This is in some respects more ambitious, as it contains many living specimens of animals and plants, and experiments are regularly demonstrated in it. Also it seeks to spread its influence wider. In the summer one of the assistants is sent out to Moscow's most popular park, there to show the populace that brainless frogs or even isolated nerve-muscle preparations are still capable of movement and activity, and so to dispel such old-fashioned notions as that life is dependent upon a soul. . . .

So the business continues, of planning, and carrying out plans, and educating according to plan. Some observers have thought that planning on the Russian scale will prove impossible because the men at the top, overburdened with work and momentous decisions, will become exhausted. There was a tendency in this direction in the earlier years of the revolution, but the danger was perceived and various measures of decentralization were introduced. At the moment, I doubt whether a Russian Commissar

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has such an arduous life as a British Cabinet Minister. At any rate, he has one source of worry removed. If he has elaborated a carefully thought-out plan, he can generally get it adopted as a whole, and need not submit to seeing it mangled in deference to vote-catching needs, or sacrificed on the altar of expediency or compromise.

One method for ensuring decentralization is that, within the main plan for the U.S.S.R. as a whole, minor plans for the separate regions must be drawn up by the regional authorities. For instance, as I was waiting to present an introduction in one of the chief State departments concerned with scientific planning, the secretary showed me a volume which had just arrived—the Ten Year Plan for Siberia. This, a volume of some five hundred pages, was all worked out in the capital of Siberia, Novo-Sibirsk, by people better acquainted with local conditions than any one in Moscow could be.

In parenthesis, Siberia must in some ways be the most exciting region of the U.S.S.R. It is there that cities spring up almost overnight, called into being out of barren steppes at the behest of the central authority, all in due relation with the natural resources of the region and the planned lines of communication and electrifica-

tion. Already, for instance, the new coal basins of south-western Siberia and the new metalliferous regions of the Urals have been planned as a single economic unit, with a unified system of railroads.

While we were in Russia, a German town-planning expert was travelling over the huge Siberian spaces in a special train with a staff of assistants. Where cities are to arise, he stops for a few days, picks out the best site, lays down the broad outlines of the future city, and passes on, leaving the details to be filled in by the architects and engineers who remain. A modern Arabian Nights, with a modern genie on a modern version of a magic carpet.

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It is, of course, one thing to make a plan and another to put it into execution. And there is no doubt that in Russia many admirable paper schemes have gone wrong in practice because of faulty co-ordination, or have fallen far short of the effect that was aimed at owing to inefficient business administration or poor workmanship. Abundant instances of such shortcomings are to be found in books like Knickerbocker's *Five Year Plan* or Istrati's *Vers l'autre flamme*.

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Let me mention but one difficulty, because it is inherent in the business of planning. The consolidation of almost all political and economic control at the centre has made possible audacious and comprehensive planning, of which the Five Year Plan is the first-fruits. Nothing else but this could have stabilized the revolutionary régime and effectively converted an extremely backward society to a new method of existence. But here, again, there is a reverse to the medal. This same consolidation has also spelt congestion. The bureaucratic machine needed for this vast task was itself inevitably vast. It had to be hastily improvised and was at first not particularly efficient. Some of the worst vices of bureaucracy—overstaffing, red tape, shifting of responsibility, slowness and timidity in arriving at a decision—were speedily realized. Purgings and reorganizations have been effected, but though the machinery is now, it seems, improved, it is still very far from perfect.

Then, if you are going to work according to a central plan, the plan must be really comprehensive. If part of your system is planned and part not, or if part is planned right and part planned wrong, the most alarming consequences are due to follow. In the early years after the civil war period a great many difficulties of this

sort arose. The authorities were essaying a formidable task in which there were no precedents to guide them ; naturally they sometimes made mistakes, or their calculations were upset by unexpected events. A salient example was the so-called ' Scissors Crisis ' of 1923, when prices for agricultural produce steadily declined and those for industrial goods as steadily rose, until the peasant grew discouraged with the return which he got for his labour, and began to reduce his sowings and his sales. And this, it appears, was due chiefly to an enthusiastic but one-sided planning of industry, which had not taken into account the economic dangers inherent in monopoly.

The economic development of post-revolutionary Russia has thus inevitably proceeded in a series of waves or bumps. These are not simply the familiar booms and slumps of capitalist countries. Each corresponds rather to a mistake or an omission in planning ; and only as the mistakes are rectified and the gaps filled up can the machinery be expected to run smoothly.

However, the astonishing thing to the dispassionate observer is not that such failures should occur, but that in spite of their number and magnitude and all the handicaps they impose, the plan appears to be succeeding. For it was

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an audacious conception : nothing less than a revolution alike of thought, objective, and practice, all to be carried out, in a country barely emerging from the Middle Ages, at a speed not equalled by capitalist countries even at the high tide of the industrial revolution.

Another question at once crops up. What will happen if the plan succeeds, and keeps on succeeding ? At the moment, the Russians have a tangible, obvious goal. They know that they are still much below the level of advanced capitalist countries in the total amount of their material wealth, in their output, in the standard of living of their people ; and they want to raise themselves to that level. So far from there being at present the least danger of over-production, increased production is still the great aim in every field. However, it is impossible to bring up the level simultaneously all round, and one of the chief functions of the central planning committees is to guide the energies and resources of the country so that production shall be greatest where it is most greatly needed. During the first years, it has been laid down that 'heavy industry'—meaning all industries which themselves produce further means of production, like coal-mining, metal-working, machine industry, electrification projects—shall receive the lion's share,

while 'light industry'—including all industries producing goods directly for the consumption of the people, like clothes, food, or furniture—must for the time being take second place.¹

The one calling in which socialization and planning is likely to lead speedily to unemployment is agriculture, where the substitution of big farms abundantly provided with machines, in the place of a vast number of individual peasant holdings cultivated by mediaeval methods, will mean much greater production by many fewer workers. But the needs of industry in the narrow sense are so great that the authorities reckon that all the workers thus displaced will readily find employment in the growing array of factories.

The first result of the plan, then, will be for Russia to reach a high level in heavy industry, even though this means keeping the food and comforts of the people at a low level. The next step will be to raise light industry to a corresponding level. Food and oil and timber will no longer have to be exported in bulk to pay for foreign machinery and foreign brains. Money and man-power can be poured into the manu-

¹ NOTE (Jan. 1932).—The outline of the second Five Year Plan recently made public envisages a steady rise in *per capita* consumption in the second planned quinquennium.

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facture of textiles and cheap motor-cars, of clothes and boots, of paper and books, of ornaments and fancy goods, and both the amount and the variety of food-products available to the Russian populace will be increased.

If all goes well, this stage, when both industry and standard of living rival those of advanced capitalist countries, will be reached in fifteen or twenty years. The really interesting question is what will happen after this. Will those who direct policy in Russia, inflamed with the passion for production, insist on the pouring forth of an ever-increasing stream of articles irrespective of their utility and of whether the people really want them, just as capitalistic industry, inflamed by the passion for profits, forces new and unreal wants upon the democracies of industrial countries by the mass-suggestion of well-directed advertisement campaigns? Will they go to the other extreme and leave it to the people to be as lazy as they like, once a certain level has been reached, using the increased productivity of well-planned industry almost entirely to reduce the hours of labour? Or will they steer a middle course, arriving partly at a reduction of working hours, but also, by propaganda or compulsion, seeing to it that new goods are produced which they believe will in the long run be useful, even

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if at the moment the mass of the people do not see their value? I should imagine they will choose this third method. If so, we shall really see a wholly new kind of social economy.

Such questions, although apparently so remote, are worth asking. For one thing, because they force us to think out what we really believe to be the aim of society; and for another, because they remind us that the present state of affairs in Russia is the barest beginning.

Let me illustrate this last point from human development. During the first weeks of its life, the human embryo is helpless and uncouth. But it is then that are being laid down the broad lines of its organic plan; and it is by filling in that rough plan that it later develops into a vivid active creature triumphing over its environment. Soviet Russia in this third year of its Five Year Plan is like an embryo half-way between conception and birth. It is no more like what it may become a generation hence than is such an embryo to a young man in the prime of his life. But its guarantee of continuity is that it already possesses a plan of construction which will permit it to expand and develop in an orderly organic way. That, it seems to me, is the right angle from which to regard the Five Year Plan.

CHAPTER IV

RUSSIA AND THE WORLD

WE left England for Russia just when the German financial crisis of July 1931 was engaging the world's attention. Our boat called at Hamburg, and a walk through the streets was enough to show one that things were grave : men and women alike looked pinched and tense, strained with past effort and present foreboding. In Russia itself it is difficult to get foreign news. But rumours circulated that Britain was negotiating for a large foreign loan, and that British banks were refusing payment. As it happened, the former statement was true, the latter untrue ; but both seemed to us equally improbable—or equally probable. Then, after three weeks, we returned—to find not only Germany and England, not only Western Europe, not only the industrial nations, but the whole capitalist world, in the throes of a crisis, a crisis which since then until this time of writing¹ has grown steadily more acute.

It is no wonder that our thoughts turned to

¹ (and of publication !)

comparison between the state of affairs in Russia and in the world outside. Russia is still at a low level of productivity and standard of living ; but she is progressing upward, and shows little of the unemployment and none of the so-called over-production that elsewhere have descended like a blight upon all capitalist countries, whether free-trade or protectionist, possessors of too much or too little gold, industrial or agrarian, democratic or the reverse, central or colonial, old or new. How far is this favourable state of things in Russia due to its communist system of government, and its planned economy, how far merely to the fact that it still has much leeway to make up before reaching the level of production of the capitalist world, or to the fact that it is a vast area, more self-contained and self-supporting even than the United States ? And how far is the gloomy state of affairs in the other countries of the world due to their capitalist system, how far to their lack of planning, or how far merely to the temporary breakdown of the gold standard as a medium of international exchange, or to the unreasonable tariff barriers erected by nationalism ?

It is impossible to offer a clear-cut answer to these questions. But it is possible to look at some striking ways in which the Russian system

differs radically from ours, and try to think out what cumulative effect these may have as the years pass. And this is what I have attempted to do in this chapter.

As we drove out in a motor-bus from Leningrad to Detskoe Selo ('The Children's Village,' as Tsarskoe Selo has been rechristened, on account of its many rest homes and sanatoria, in place of 'The Tsar's Village,' in which the palaces are now merely kept as museums), we passed a battalion of soldiers, singing as they marched along the dusty road. (In Russia, military bands are rare: but every company has its song-leaders.) We asked what they were doing, and were told that they were going to help get in the harvest on a State farm. In Western countries the military do not help in agriculture.

In Moscow, again, where the proper paving of the streets is an urgent municipal task (up to a few years ago, they were all of the most atrocious *pavé*, big irregular cobblestones, with holes and ruts everywhere; this is now being rapidly replaced either by asphalt or by stone setts), the work in one particular street was being undertaken by soldiers.

There was a good deal of road reconstruction in this neighbourhood, and for a time the tram-lines were up. As the trams provide almost the

only method of transport in Moscow, this was a grave inconvenience. Late one evening, as we passed this corner, we saw a gang of people working at the lines by the light of flares. They did not look like ordinary workmen. Nor, in fact, were they ordinary workmen. They were a volunteer gang, a *Subotnik*, as it is called, who, having been told of the urgent job that needed doing, had come down after their own day's work was over to get it done—and, of course, without extra pay.

This *Subotnik* business is an interesting one. I talked to my interpreter about it one day. She told me that her husband was a lawyer, and that recently the office in which he worked had got together a *Subotnik* to help get in the potato harvest some way outside Moscow. In this case they had given up their day of rest to the work. They had had an excursion into the country, a good country dinner, some healthy outdoor exercise, and had come back to work next day refreshed in mind and body, with the conviction of having been both virtuous and useful. Then the farm-workers had plied them with legal questions, and this too had been interesting.

Highly placed personages now and again give a good example by taking part in a *Subotnik*. Congestion of unloaded goods wagons in the cities

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has been a frequent source of food-shortage and economic trouble in Russia. Accordingly unloading food from trucks is a favourable object for these volunteer gangs ; and one is told that Stalin himself sometimes comes down to the Moscow goods sidings to help.

Now what is interesting about these volunteer efforts is perhaps not so much the spirit behind them (though this is interesting enough in itself, and doubly so in the poor living conditions now prevalent in Russia) as the fact that neither they nor the undertaking of civilian jobs by the military would be possible in ' bourgeois ' capitalist countries. They would not be possible there because of organized labour. What an outcry there would be if the Government put soldiers on to road-construction or farm-work ; what infinity of trouble there would be with trades-union regulations if office-workers wanted to expedite the annual recovery of Piccadilly or Oxford Street from its state of being ' up,' or began to talk of relieving congestion at the docks or the railway termini by means of nocturnal unloading parties ! We should be told that the black-coats were taking the bread out of the mouths of honest transport workers, the soldiers undercutting the agricultural labourers' standard of living, and so on.

Similarly, in most countries, the use of prison labour on productive work is severely limited by such considerations ; whereas in Russia, as we all know, prisoners and exiles are used in the lumber camps, in the peat industry, and in numerous other economically productive ways.

Here, as it seems to me, is an important difference between the Russian system and all others ; nor is it merely a symptom of difference, but a feature of the system which is likely to grow more and more important as the present industrial-economic crisis continues.

For what, at bottom, is happening to capitalist countries at the moment ? The so-called over-production of food and goods cannot really be over-production when there are millions of people who would be only too glad of the surplus, and indeed are often underfed. Is it not rather that, while it was to capital's immediate interest to organize industrial production, and to labour's immediate interest to organize stable wage-levels and conditions of industrial work, it has been to nobody's immediate interest either to organize distribution of purchasing power, whether through the gold standard or through wages, or to organize leisure.

Production has been, since mediaeval times, completely transformed. It has been trans-

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formed on one side by the introduction of mechanical power and elaborate machinery ; on another by the development of larger and larger capitalist producer units—first the joint stock company, then the vertical or horizontal trust, the private or State monopoly, the regional or national group of owners, and so on.

Labour too has transformed itself radically since the eighteenth century. To put it briefly, it has transformed itself from a commodity into a class or guild. It was once a mere commodity, bought and sold according to the simplest laws of supply and demand, a raw material to be mined and used when capital needed it, and thrown back on the scrap-heap when no longer required ; proletarian life was thus both a quarry and a dump. It has become a guild. It has evolved a protective armour adapted not primarily or necessarily to the best economic interests of the community as a whole, but to repel the exploitation and the attacks of capital. In the same way technical evolution of productive methods by capital has not been related primarily or necessarily to the community's interests, but to the function of securing individual profits. In so far as the direct distribution of goods has been concerned, it has been hampered by middlemen's charges ; its aim

again has been related to making immediate profit, often even at the cost of restricting supplies—not to what ought to be its aim, of getting the maximum amount of goods distributed to the maximum number of people.

Meanwhile the system of distributing purchasing power by means of wages remained in all essentials unchanged (until certain new growths were forced upon it in the last few years by the wholesale increase of unemployment). When new machinery increased productive capacity per worker, though the wages of those in work were somewhat increased, no provision was made concerning the purchasing power of those who were thrown out of work by the technological improvement. A few idealists spoke of the three-hour working day or the four-month working year as the eventual goal of mechanical improvement, but no one in the business world paid much attention to them.

It is difficult to estimate exactly the change in productivity and average standard of living since the late Middle Ages, after the Black Death. But it will do no harm to attempt a numerical illustration. We shall probably be erring on the side of caution if we estimate the increase in productivity at 50, and on the side of excess if we estimate the rise in real well-being for the

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mass of the people at 5. On such a basis there remains a disparity of ten to one ; and such a figure would represent the wastefulness, from the point of view of society as a whole, of our present system with all its vested interests, middlemen, parasites, its internal friction (not to mention its international barriers), and its actual waste.

It seems obvious, then, that if we could get rid of these sources of waste, we could at once raise the general standard of living threefold while at the same time diminishing working hours threefold.

In passing, the success of Russia in raising herself in ten years from the deplorable level of 1920 to pre-war productivity, with every prospect of rapid further progress, and this in spite of the formidable obstacles of low educational standard, an overstaffed bureaucracy, and great waste due to lack of mechanical aptitude and business efficiency, is some measure of the merits of her planned system, and of the wastefulness inherent in that of other countries. Another measure of the same thing was the increased productivity of the industrial nations during the war, owing to planning and enthusiasm, in spite of the removal of most able-bodied men into the army.

The main point to our present purpose is this :

that if by some means or another we could ensure that the results of human labour should profit the community as a whole and not either go to benefit a privileged class, or in preventable waste, or to take the bread out of the mouths of other labourers, then wholly new vistas would open before society.

In the first place, if improvement in machinery and the utilization of power be used primarily to improve production and not primarily to increase profit, while purchasing power is kept up all round by a properly regulated wage-system, then we can envisage as the right and proper step (instead of as a regrettable and 'unnatural' necessity) the progressive reduction of working hours unaccompanied by any reduction in standard of life.

The precise way in which this will be effected remains for economic and other forces to decide. What concerns us here is that it will mean a huge increase of leisure—a problem already insistent, and bound to become more so through the increase of still quite active old people which must come about through the fall in the birth-rate and the improvement in public health.

A country like Britain has now arrived at what may be called a 'ca'-canny' society, in which the independence of production, labour, and con-

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sumption and the consequent lack of economic co-ordination has led to friction, suspicion, and isolation as between the groups concerned with these different sides of the economic process. Each group has become almost a separate organism, and has secreted its own economic armour. Instead of being a single body politic and economic, the nation consists as it were of a number of partial bodies, half-heartedly fused, half-heartedly individualized, forced by the economic necessity of the whole into some sort of union, but forced by their own separate interests to nullify a great deal of the advantages of that union by secreting carapaces like so many economic tortoises.

The capitalist group, organized on the assumption of dividends for private capital, cannot pass on the benefits of its capacity for production fully or directly to the community, but only indirectly, through devious channels in which much is lost as sediment, much is locked up in unproductive or parasitic lives. The labour group, organized on the assumption of standard wages, cannot pass on the benefits of its capacity for work fully or directly to the community, since it is forced to think primarily of protecting its own standards of living against capitalist attack, and is afraid of losing its job. Roughly speaking, the

possessor of capital wants to sit back and live on his dividends, giving the minimum amount of capital for the maximum of profit, the purveyor of labour to sit back and give the minimum amount of labour for his standard wage. It is ca'-canny all round.

Accordingly the problem of doing anything socially or economically constructive with the ever-increasing amount of leisure introduced by machinery and economical administration becomes almost insoluble. A limited number of people can, if so inclined, give their services to public or private committees; art or literature or scientific research are open to that minority of people with a strong bent for such activities (though even in these fields there are indications that professional organizations may spring up to prevent the competition of amateurs or spare-time intruders). But for the most part there is no outlet for leisure but reading, wireless, the cinema, or other forms of organized entertainment; sport, motoring, drink, or just lounging about.

It is all to the good that every one should have the opportunity of games, of amusement, of reading, of doing nothing if he so wants to. But there comes a limit to the proportion of time which can be profitably so spent. Such activities

detailed adaptation of the results of research to industrial needs can be undertaken.

And so I might continue. In Professor Koltsov's Institute for Experimental Biology are being studied the most abstruse problems—of heredity in fruit-flies, of the physiology of development in salamanders, and so on ; while at the same time, since the Institute is responsible to the Commissariat of Health, it tackles problems bearing on cancer and on the inheritance of human disease.

Sometimes the insistence on practical application is not without its humorous side. Zavadovsky in the Institute of Neuro-Humoral Physiology at Moscow has considerably advanced our theoretical knowledge of the ductless glands by his experiments with thyroid extract on birds. But, *inter alia*, he has found that a certain dose of thyroid causes moulting, and so has had assigned to him a flock of one hundred geese on a State farm, on which he may experiment to see whether the feather-bed industry cannot be benefited by causing geese to moult four times a year.

There are, however, still other methods of liaison between theoretical and practical, and they are in some ways the most interesting, for they concern the recruitment of personnel and

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the interesting of the workers in scientific method. But these I shall deal with in the section of Chapter IV, which deals with education.

As regards the scientific situation in general, Russia in respect of most branches of pure science is in the first rank, and is turning out new and fundamental research work at a great rate. It is, however, rather curious that in Biochemistry and Physiology (with the exception of the brilliant work of Pavlov on the brain) Russia on the whole seems to be behindhand. It is curious, because health plays a prominent part in the Russian plan, the total expenditure on health measures in the U.S.S.R. now running to about a thousand million roubles a year, and because in the long run advance in health can only proceed on the basis of physiological and biochemical research. However, it may be urged that there was so much to do in improving the health of the country in accord with existing knowledge that up to the present attention has been concentrated on this very praiseworthy aim.

Be that as it may, the health service in Russia is very interesting. When it was established, it had two urgent tasks. One was to reduce the very high death-rate prevalent throughout the country before the war, especially among young children ; the other was to get under control the

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terrible outbreaks of epidemic disease, notably typhus, which swept across Russia in the trail of civil war and famine during the early years of the revolution. This latter task has been largely accomplished. Typhus has almost disappeared ; Russia now suffers only from epidemics which, like influenza, wreak havoc also in the most bourgeois countries.

With regard to mortality and general health, the situation has also changed markedly for the better. Looking at the people in the streets of Moscow and Leningrad, and still more in the country districts, I got the impression of a population not at all undernourished, and at a level of physique and general health rather above that to be seen in England.

We hear a great deal of the overcrowding in Moscow ; and undoubtedly it is very bad. But in spite of overcrowding and food queues, the revolution must have ameliorated the conditions of life for the bulk of the population, since the Moscow mortality rate, which in 1913 was 23·1 per thousand, has now dropped to below 13, while the infant mortality rate has fallen from 27 to 12 per cent. Indeed, all over Russia, both the general death-rate and the infant mortality rate have declined, and declined to such an extent as to more than counterbalance the slight drop

in the birth-rate. As result, the natural increase of the population is to-day greater than it was in 1913—a striking contrast with the state of affairs in all other Western nations. The population under Soviet rule is now going up to the tune of three millions every year. In fact, European Russia is the only large country inhabited by the white race which is still increasing rapidly in numbers.

It may seem surprising that the birth-rate has gone down so little, since in Russia there is no ban on birth-control information, and abortion up to three months is legal (and as performed by trained surgeons in properly equipped hospitals is a minor operation, in contrast with the dangerous business it becomes when driven underground into the hands of unscrupulous quacks or unskilled old women). But although in the big cities abortion is fairly widespread—in Moscow, for instance, the number of abortions carried out last year under State auspices only was nearly 70,000, which was a little more than the number of births—it is as yet much less practised in the country districts ; and it is only in the last year or two that clinics and health centres have begun to disseminate information about birth-control on any large scale. Accordingly I think it is likely that within a few years

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there will be a considerable drop in the birth-rate, and Russia will here fall into line with capitalist countries.

As regards medicine, our party, which was largely composed of medical men, had special facilities for seeing medical work. The general impression gained from seeing a number of hospitals, clinics, and health departments at work was a mixed one. The hospitals were usually well equipped with apparatus, often very elaborate apparatus. They did not seem to be understaffed, and their organization seemed to be running quite smoothly. On the other hand they were, by our standards, crowded: this, doubtless, like the domestic overcrowding in such places as Moscow, is due to the huge influx of people into the big industrial centres.

There was a dearth of certain important medical supplies, notably anaesthetics and rubber gloves. As a result, makeshift antiseptic precautions were often in force, and many operations which with us would be performed under general anaesthesia were in Russia being done under a local anaesthetic or no anaesthetic at all. For instance, the gynaecologists in our party were astonished to find that in the official abortion clinic, no anaesthesia at all was employed, and the women were allowed to go home after what

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seemed a very insufficient period of rest and recuperation.

However, the authorities insisted that the results were more than satisfactory. And one must remember that the ordinary Russian, man and woman, is of fine physique, and extremely tough and resistant. One meets with the same toughness among certain primitive peoples: I remember seeing in Tanganyika, at a maternity clinic for black mothers, women up and about the day after having given birth to a child; and I was told by the able American woman doctor in charge that keeping them in bed in orthodox medical fashion merely made them bored, and was on the whole actually bad for them.

When it came to the children's clinics and crèches the standard was higher. Even here there were shortcomings: the buildings were sometimes unsuitable, the equipment rather primitive, the flies not always kept out as they should be. But skill and devotion were everywhere in evidence, and the tangible results, in the shape of the children themselves, were splendid—magnificent, chubby, firm-fleshed babies: cheerful, healthy boys and girls. Our medical experts were of the general opinion that the Moscow child, in its physique, general health, and state of teeth, compared favourably with

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the average of English children, in town or in country.

Then the Central Institute for the Protection of Mother and Child is a very remarkable organization. Its propaganda posters and diagrams and broadsheets, which it sends all over the Union, are quite admirable ; and it is very busy with the important task of training doctors from outlying districts in pre-natal and child welfare methods. They come to the Institute in Moscow for a course of special training, which is given in connection with the large clinic attached to the Institute, and then go out to carry on their work in remote parts of the country.

The general impression of Russian medical work is not unlike that which one gets of Russian industry. In actual standards and level of achievement it is below ours. It is confronted with serious problems for the future, such as the recruitment and training of personnel (the training of nurses in Russia, for instance, is far less exacting than with us, and yet the demand is for more and ever more), and the ignorance, superstition, and rudimentary hygienic habits of the great bulk of the population. But the ordinary worker is guaranteed the best medical care when he is ill. The medical service has already done a great deal for general health : its movement is

upward : and it is planned on a grand and comprehensive scale, with audacious vision.

Visitors to Russia are always told on their return that they have been allowed to see only what the Soviet authorities wanted them to see, and nothing else. This, however, was certainly not true of our party. Some of the medical men, not wishing to see the purely scientific institutions on our programme, arranged matters as follows :—They got from our interpreter the names of various hospitals and directions how to reach them. Going off by themselves on the tram, they simply invaded this or that hospital, waited until some one was produced who could speak English, French, or German, and then asked to be taken round—a request which was invariably granted. Thus many of their impressions were based on the everyday routine of ordinary institutions, not on pre-arranged visits to show places.

There is still a great deal to be done in the field of public health in Russia. In the heat of summer, flies and dust both become very bad ; typhoid fever in certain districts (such as Leningrad itself) is far too prevalent ; most of the sanitary habits of the average Russian are very primitive—though no more so than were those of Western Europe in the eighteenth century ;

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although in some shops food is kept scrupulously clean, in the private markets there is every facility provided for the spread of germs and dirt. Yet in spite of all this, the achievements of the last ten years are truly remarkable, for Russia has been raised from a famine-stricken, plague-ridden country of mediaeval habits to one whose health is near the general level of other European nations: and the effects of the Government's health policy are most apparent where they will have the greatest effect—among the children. If the Russian experiment succeeds, Russia in twenty years' time will have not only a very good medical service, but—what does not always follow—a very healthy population.

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One of the great difficulties encountered by Russia in carrying out her plan is the absence of scientific spirit and of mechanical aptitude among the bulk of the people. With three-quarters of your population made up of primitive peasants who believed that a thunderstorm was due to the prophet Elijah driving over the clouds in his chariot, and were accustomed to turn to the priests when the weather or the crops went wrong, you could hardly expect a scientific atti-

tude of mind ; and with motor vehicles and machinery of all kinds as scarce as they were in pre-revolutionary Russia, you could not expect to find the rising generation fond of mechanical tinkering or used to the ways of machines.

Various measures are being taken to remedy these deficiencies : I shall deal with some of them later in talking of education. Attempts, however, are also being made to disseminate new ideas to the masses by way of popularization, through broadcasting, cheap popular books, museums and exhibitions. Pictures and exhibitions of machines greet you everywhere. Even in the gallery of modern French art in Moscow (which, thanks to two pre-war merchant collectors, contains perhaps the finest collection of modern French paintings in the world), placards with pictures of tractors confront you in the entrance-hall as you are preparing your mind for the Gauguins and the Monets. In the Park of Culture and Rest in Moscow there is a permanent exhibition of different kinds of machinery, with elaborate diagrams to make it all clear ; and there seems always to be a string of interested people studiously mechanizing their ideas.

In the biological sphere the scientific spirit is just as important as in the physical or mechanical. Here too propaganda is very busy. I have spoken

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of the admirable posters connected with maternal and child welfare. Veterinary science too is much boosted ; for instance, in the Park of Culture and Rest, exhibitions of the highly realistic posters and diagrams about the improvement and the diseases of live-stock is almost (though definitely not quite) as prominent as that concerning machinery.

In this field the work of two museums happened to come under my personal notice. The first of them was the Darwin Museum, founded and carried on by Professor Kohts. This has two special features. For one thing, it has had at its disposal the services of a first-rate painter and sculptor, so that the collections demonstrating the ordinary evidences for evolution are displayed against a background of really beautiful scenes of animal life, and of fine sculptures, especially of apes and prehistoric man, together with colossal busts of famous biologists and paintings of incidents in their lives. In the second place, none of the specimens are labelled, and all the cases are open : the museum is designed so that its contents may be personally demonstrated and handled. And as a matter of fact, most of the Director's time is taken up in conducting parties round the place and lecturing to them on evolution. These parties are of very

varied nature. School-teachers and students one might expect: but there also come groups of soldiers, of Red Army officers, of Kalmuks from the steppes.

There is another Museum of Evolution in Moscow, organized by Professor Zavadovsky. This is in some respects more ambitious, as it contains many living specimens of animals and plants, and experiments are regularly demonstrated in it. Also it seeks to spread its influence wider. In the summer one of the assistants is sent out to Moscow's most popular park, there to show the populace that brainless frogs or even isolated nerve-muscle preparations are still capable of movement and activity, and so to dispel such old-fashioned notions as that life is dependent upon a soul. . . .

So the business continues, of planning, and carrying out plans, and educating according to plan. Some observers have thought that planning on the Russian scale will prove impossible because the men at the top, overburdened with work and momentous decisions, will become exhausted. There was a tendency in this direction in the earlier years of the revolution, but the danger was perceived and various measures of decentralization were introduced. At the moment, I doubt whether a Russian Commissar

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has such an arduous life as a British Cabinet Minister. At any rate, he has one source of worry removed. If he has elaborated a carefully thought-out plan, he can generally get it adopted as a whole, and need not submit to seeing it mangled in deference to vote-catching needs, or sacrificed on the altar of expediency or compromise.

One method for ensuring decentralization is that, within the main plan for the U.S.S.R. as a whole, minor plans for the separate regions must be drawn up by the regional authorities. For instance, as I was waiting to present an introduction in one of the chief State departments concerned with scientific planning, the secretary showed me a volume which had just arrived—the Ten Year Plan for Siberia. This, a volume of some five hundred pages, was all worked out in the capital of Siberia, Novo-Sibirsk, by people better acquainted with local conditions than any one in Moscow could be.

In parenthesis, Siberia must in some ways be the most exciting region of the U.S.S.R. It is there that cities spring up almost overnight, called into being out of barren steppes at the behest of the central authority, all in due relation with the natural resources of the region and the planned lines of communication and electrifica-

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tion. Already, for instance, the new coal basins of south-western Siberia and the new metalliferous regions of the Urals have been planned as a single economic unit, with a unified system of railroads.

While we were in Russia, a German town-planning expert was travelling over the huge Siberian spaces in a special train with a staff of assistants. Where cities are to arise, he stops for a few days, picks out the best site, lays down the broad outlines of the future city, and passes on, leaving the details to be filled in by the architects and engineers who remain. A modern Arabian Nights, with a modern genie on a modern version of a magic carpet.

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It is, of course, one thing to make a plan and another to put it into execution. And there is no doubt that in Russia many admirable paper schemes have gone wrong in practice because of faulty co-ordination, or have fallen far short of the effect that was aimed at owing to inefficient business administration or poor workmanship. Abundant instances of such shortcomings are to be found in books like Knickerbocker's *Five Year Plan* or Istrati's *Vers l'autre flamme*.

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Let me mention but one difficulty, because it is inherent in the business of planning. The consolidation of almost all political and economic control at the centre has made possible audacious and comprehensive planning, of which the Five Year Plan is the first-fruits. Nothing else but this could have stabilized the revolutionary régime and effectively converted an extremely backward society to a new method of existence. But here, again, there is a reverse to the medal. This same consolidation has also spelt congestion. The bureaucratic machine needed for this vast task was itself inevitably vast. It had to be hastily improvised and was at first not particularly efficient. Some of the worst vices of bureaucracy—overstaffing, red tape, shifting of responsibility, slowness and timidity in arriving at a decision—were speedily realized. Purgings and reorganizations have been effected, but though the machinery is now, it seems, improved, it is still very far from perfect.

Then, if you are going to work according to a central plan, the plan must be really comprehensive. If part of your system is planned and part not, or if part is planned right and part planned wrong, the most alarming consequences are due to follow. In the early years after the civil war period a great many difficulties of this

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sort arose. The authorities were essaying a formidable task in which there were no precedents to guide them ; naturally they sometimes made mistakes, or their calculations were upset by unexpected events. A salient example was the so-called ' Scissors Crisis ' of 1923, when prices for agricultural produce steadily declined and those for industrial goods as steadily rose, until the peasant grew discouraged with the return which he got for his labour, and began to reduce his sowings and his sales. And this, it appears, was due chiefly to an enthusiastic but one-sided planning of industry, which had not taken into account the economic dangers inherent in monopoly.

The economic development of post-revolutionary Russia has thus inevitably proceeded in a series of waves or bumps. These are not simply the familiar booms and slumps of capitalist countries. Each corresponds rather to a mistake or an omission in planning ; and only as the mistakes are rectified and the gaps filled up can the machinery be expected to run smoothly.

However, the astonishing thing to the dispassionate observer is not that such failures should occur, but that in spite of their number and magnitude and all the handicaps they impose, the plan appears to be succeeding. For it was

a sprinkling of bigger places, plastered white and yellow, with Doric columns at the opening of a recess, or Ionic pilasters all along the ample front. Spacious, yet untidy, as if man, in spite of his many centuries in this spot, had never quite taken the trouble to redeem it wholly from nature: a cross between antiquity and a new town in America's west, well seasoned with Chekov.

But the glory of Ryazan is its Kremlin. Here, surrounded on three sides by green ramparts and on the fourth by the river, is a really wonderful group of buildings. The first, as you approach from the town, is a memorial gateway surmounted by a tower and a golden spire—a piece of nineteenth-century work, but impressive enough.

You pass through its arch, and gasp: the tower had effectively screened the real treasures until the last moment. To the left is a pleasant cream-coloured baroque church and a dignified set of monastic buildings, now housing an excellent museum: between them a glimpse of a great expanse of green meadows, dotted with haycocks, and giving on to remote undulating distances behind.

To the right, backed by trees in a garden, is an old belfry of the conico-pyramidal shape that

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Russian ecclesiastical architecture uses with such strange and striking effect. Beyond it, a little church with five towers all surmounted with onion-like cupolas (the familiar badges of most Russian churches)—these particular ones a vivid ultramarine blue, with gold crosses.

And in the centre, dominating the rest, the old sixteenth-century Cathedral, with again five cupola'd towers, but the cupolas here of immense size, the central one covered with gold foil, the others pale sky-blue with gold stars. The walls are of rose-coloured brick, pierced by four tiers of large windows, the white stone of whose sills and bordering pilasters and ogival tops is literally embroidered with carving, a mixture of Renaissance classicism and almost Persian arabesques. A beautiful, strange, imposing pile.

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The harbour is outside the town. A busy little wharf, opposite a broad stretch of sand where naked men and boys are bathing. Just above is a pontoon bridge, its centre section detachable to allow passage to barges and steamers. Boys fish from the piles; strings of carts file across, with people bound for the station of the little toy branch railway on the other bank—

sportsmen with guns and dogs back from a day's shooting, peasant women and girls returning from market, children going to the Pioneer Camps (what we should call Boy Scouts' and Girl Guides' encampments) up in the distant pinewoods.

Six o'clock. The paddles churn, and we slip off, through the gap in the bridge, and up between fifteen-foot banks with the balmy summer air streaming past. Sand-martins nest in the steep places of the bank; kites float and flap overhead; hoodie-crows scavenge the fields, with occasional flocks of familiar rooks and jackdaws; there are river-gulls and screaming terns, and many wagtails; the banks, purple here and there with loose-strife, are populated by sandpipers and redshanks and other waders, with an occasional heron majestic among the reeds.

The river twists and bends like a snake. It is two hours before we are out of sight of Ryazan. The Kremlin with its crown of churches gleams out above the level meadows. At one moment its windows all catch the sunset—a marvellous illusion of interior fire.

In spring, the river floods the flat lands for miles; so along the banks are beacons to mark the river-bed; and the villages must cluster on the few low hills. We passed one in the grey twilight: a silhouette of roofs and trees and a

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of fortified monasteries which encircled Moscow. Centuries ago it and its fellows constituted a main line of defence against the Tartars. To-day it has lost its utilitarian function ; but long may it stand in its fantastic and dream-like beauty.

Kolomna itself, though with a big railway-carriage factory, is a smaller town than Ryazan, its streets more straggling, its market-place more untidy. But it too has some fine churches (one of them converted into a big communal dining-room) and beautiful private houses. Women were busy washing in the floating wooden washing-place by the river, and flocks of geese, cruising around our steamer, indignantly scattered at its departure.

Green fields, more immense than ever, with an infinity of haycocks, looking like termite-nests in Central Africa. Haymaking still in progress, with lads cantering off on horseback to put a rope round another bundle of hay and haul it along to the stack. Then low rolling hills with pinewoods here and there—the pleasant landscape slips slowly by.

After supper on our second night there is a great noise between decks : an entertainment is in progress. A woman from the first-class sings old ballads ; a humorous-looking man tells funny stories ; there are choruses, accompanied on the

concertina by a weedy-looking chinless lad (a rare type in Russia) with huge check cap. Dances are called for, and two men dance against each other. First one stands forth, goes through his steps ; and then his opposite number, who has been watching in immobile silence, tries to outdo him. The first begins again, going one better than the time before ; and so it goes on until they give up from exhaustion. It is a wonderful exhibition, accentuated by the queer impassive faces of the dancers, and the strange gestures, apparently of a symbolically insulting nature, with which they sometimes end their turns.

Afterwards a little girl shyly does a *pas seul*, and then the foreigner is loudly called upon. I explain that I know no Russian dances, so a buxom waltz-partner is found for me, and we whirl around in the tiny open space until giddiness supervenes and—to loud applause—we stop.

The last morning we approach Moscow. There are some big country houses, now turned into rest homes ; then a newish and very ugly monastery which has been converted into a reformatory for adult criminals. Although the cross has been stripped from its cupola, an old peasant-woman on board persisted in crossing herself devoutly towards the building as long as it was in sight.

★

AMONG THE SOVIETS

We passed the famous monastery of Kolomenskoye with its enormous conical tower. Buildings and factories began to appear, and the water grew foul. The actual approach to Moscow is dingy and chaotic: strangely enough in a planned society, the idea of town-planning has only just begun to be applied in Moscow. And finally we pull up at a quay, and so, past the magnificence of the Kremlin, to our hotel. We carry with us a picture very different from that we had gained from towns—of peasant life still firmly rooted in the soil, of old, slow ways of living, of an ancient and lovely countryside, of healthy country folk—yet all touched already in some degree by the new strange spirit of Russian communism. It was a very interesting as well as a beautiful pendant to our Russian impressions.

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